

<210> 8947
 <211> 1496
 <212> PRT
 <213> B.fragilis

<400> 8947

Leu	Tyr	Leu	Lys	Glu	Met	Asn	Pro	Arg	Leu	Leu	Ile	Pro	Leu	Phe	Cys
1			5						10					15	
Met	Leu	Leu	Leu	Thr	Thr	Phe	Phe	Ser	Cys	Val	Asp	Thr	Ala	Pro	Thr
			20					25					30		
Lys	Glu	Val	Gln	His	Ile	Asp	Ser	Leu	Asn	Ser	Arg	Ala	Tyr	Met	Tyr
		35					40					45			
Arg	Tyr	Arg	Asp	Leu	Asp	Ser	Ser	Cys	Lys	Ala	Ala	Ser	Gln	Ala	Tyr
	50					55					60				
Lys	Glu	Val	Ser	Met	Tyr	Ser	Gln	Gly	Lys	Ala	Glu	Ala	Ser	Asn	Asn
65					70					75				80	
Leu	Ala	Phe	Cys	Ala	Phe	Met	Arg	Met	Asp	Phe	Asp	Thr	Ala	Glu	Arg
				85					90					95	
Leu	His	Lys	Gly	Val	Tyr	Asp	Leu	Thr	Lys	Asn	Glu	Leu	Glu	Leu	Leu
			100					105					110		
Ile	Ala	Asp	Ile	Gly	Leu	Met	Lys	Ile	Tyr	Gln	Arg	Thr	Ala	Met	Asn
		115					120					125			
Lys	Glu	Phe	Tyr	Asp	Tyr	Arg	Asn	Ser	Ala	Ile	Arg	Arg	Met	Lys	Arg
	130					135					140				
Ile	Asp	Glu	Glu	Asn	Asn	Leu	Phe	Val	Asp	Arg	His	Glu	Ser	Ala	Arg
145					150					155					160
Leu	Asp	Tyr	Ala	Phe	Thr	Glu	Phe	Phe	Ile	Val	Ser	Ala	Val	Tyr	Tyr
				165					170					175	
Tyr	Tyr	Leu	Gln	Gln	Arg	Thr	Glu	Ala	Met	Ala	Ser	Leu	Asn	Glu	Ile
			180					185					190		
Gln	Leu	Asn	Glu	Asp	Leu	Ala	Thr	Asp	Thr	Asn	Gln	Ile	Leu	Tyr	Phe
		195					200					205			
His	Tyr	Ile	Lys	Gly	Ser	Ala	Gly	Leu	Cys	Glu	Gly	Lys	Thr	Pro	Asp
	210					215					220				
Glu	Arg	Lys	Leu	Glu	Glu	Phe	Asp	Glu	Leu	Tyr	Thr	Thr	Trp	Lys	Met
225					230					235					240
Ala	Ser	Glu	Gln	Gly	Tyr	Leu	Tyr	Phe	Glu	Gly	Asn	Gly	Leu	Gln	Gly
			245						250					255	
Leu	Thr	Asn	Leu	Met	Ala	Ser	Gln	Glu	Ser	Tyr	Glu	Leu	Phe	Leu	Asn
		260						265					270		
Arg	Arg	Ser	His	Ala	Leu	Thr	Arg	Phe	Gly	Ile	Pro	Val	Asp	Ser	Leu
		275					280					285			
Leu	Pro	Leu	Arg	Leu	Gly	Gln	Met	Ala	Leu	Glu	Arg	Phe	Arg	Lys	Tyr
	290					295					300				
Asn	Asp	Leu	Tyr	Gln	Ile	Ala	Gly	Ala	Tyr	Val	Ser	Ile	Gly	Lys	Tyr
305					310					315					320
Leu	Asn	Ala	His	Gly	Arg	Tyr	Thr	Glu	Ala	Leu	Asp	Thr	Leu	Ala	Lys
			325						330					335	
Ala	Leu	Asp	Cys	Val	Asn	Gln	His	His	Met	Ser	Tyr	Tyr	His	Ser	Val
		340					345						350		
Ala	Asp	Thr	Leu	Asp	Lys	Leu	Gln	Val	Phe	Val	Pro	Asn	Lys	Asp	Val
	355						360					365			
Ala	Tyr	Thr	Glu	Val	Thr	Trp	Leu	Gly	Lys	Glu	Lys	Val	Lys	Thr	Val
	370					375						380			
Pro	Glu	Trp	Ile	Ser	Arg	Ile	Arg	Glu	Gln	Leu	Ser	Val	Ser	Tyr	Ala
385				390						395					400
Cys	Leu	Gly	Met	Lys	Pro	Ala	Ser	Asp	Tyr	Asn	Arg	Asn	Val	Tyr	Leu
			405						410					415	

Asp Ile Leu Arg Tyr Thr Arg Gln Asp Lys Glu Leu Glu Ser Arg Tyr
 420 425 430
 Leu Ser Leu Glu Gln Glu Ser Arg Gln Leu Asn Val Val Leu Phe Phe
 435 440 445
 Val Ile Ile Gly Leu Ile Leu Val Thr Ala Met Phe Trp Leu Phe Asn
 450 455 460
 Lys Arg Ser Lys Val Arg Asn Arg Ile His Ile Ala Arg Leu Arg Gln
 465 470 475 480
 Thr Leu Asp Val Cys Gln Lys Ile Thr Ala Ser Ile Pro Val Asp Val
 485 490 495
 Thr Asp Glu Ser Glu Ile Val Tyr Ala Ile Ser Glu Ser Ile Gln Pro
 500 505 510
 Asp Met Glu Gln Leu Phe Gly Ala Thr Glu Ile Arg Ile Gly Ile Arg
 515 520 525
 Asn Glu Glu Thr Gly Asp Ile Glu Phe Asn Glu Glu Cys Glu Ser Glu
 530 535 540
 Gln Thr Asp Glu Pro Lys Ser Ile Gly Glu Val Gly Ile Gly Ser Val
 545 550 555 560
 Phe Asn Leu Tyr Val Pro Asp Lys Thr Glu Pro Ile Gly Ile Leu Lys
 565 570 575
 Leu Phe Thr Arg His Arg Leu Asn Lys Asp Glu Gln Ala Leu Val Lys
 580 585 590
 Val Ile Thr Pro Tyr Ile Ala Trp Ala Leu Asp Asn Gly Met Thr Phe
 595 600 605
 Ile Ser Leu Gly Asp Glu Arg Asn Lys Leu Glu Lys Gln Arg Tyr Val
 610 615 620
 Tyr Glu Gln His Ile Ala Gly Asn Lys Arg Gln Asn Leu Ile Lys Lys
 625 630 635 640
 Ser Cys Leu Ala Ile Val Asp Gly Ile Asn Pro Tyr Ile Asp Arg Ile
 645 650 655
 Ile Asn Glu Val His Lys Leu Thr Glu Lys Gly Phe Ile Asn Asn Asp
 660 665 670
 Arg Ile Lys Lys Glu Lys Tyr Gln Tyr Ile Asp Glu Leu Val Thr Thr
 675 680 685
 Ile Asn Glu Tyr Asn Asp Ile Leu Ala Leu Trp Ile Lys Met Lys Gln
 690 695 700
 Gly Ser Leu Ser Leu Asn Ile Glu Asn Phe Glu Leu Asn Glu Leu Phe
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 Glu Leu Ile Ser Lys Gly Arg Lys Ala Phe Glu Met Lys Lys Gln Arg
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 Leu Glu Ile Glu Pro Thr Lys Ala Leu Val Lys Ala Asp Lys Ala Leu
 740 745 750
 Thr Leu Phe Met Ile Asn Thr Leu Ala Glu Asn Ala Arg Lys Tyr Thr
 755 760 765
 Pro Glu Gly Gly Ile Val Lys Ile Tyr Ala Lys Arg Thr Asp Glu Tyr
 770 775 780
 Val Glu Ile Ser Val Glu Asp Asn Gly Arg Gly Leu Ser Thr Glu Asp
 785 790 795 800
 Ile Thr Lys Ile Ile Gly Glu Lys Val Tyr Asp Ser Gln Ser Ile Gly
 805 810 815
 Met Lys Asp Asn Pro Asp Lys Glu Glu Leu Lys Arg Ser Lys Gly Ser
 820 825 830
 Gly Phe Gly Leu Met Asn Cys Lys Gly Ile Ile Glu Lys Tyr Lys Lys
 835 840 845
 Thr Asn Asp Leu Phe Arg Ile Cys Thr Phe Asn Ile Glu Ser Thr Pro
 850 855 860
 Gly Lys Gly Ser Arg Phe Tyr Phe Arg Leu Pro Pro Gly Val Arg Lys
 865 870 875 880
 Ile Ile Gly Ile Cys Leu Cys Leu Val Gly Leu Phe Gly Phe Phe Ser

				885					890					895
Cys	Gln	Gly	Glu	Pro	Met	Pro	Glu	Lys	Leu	Lys	Asp	Ile	Pro	Val
			900					905					910	
Ser	Val	Thr	Leu	Ala	Ala	Glu	Ala	Glu	Tyr	Glu	Arg	Leu	Leu	Asp
		915						920					925	
Ala	Ser	Arg	Phe	Ala	Asp	Thr	Val	Tyr	Tyr	Cys	Asn	Val	Ile	Glu
		930						935				940		
Phe	Glu	Leu	Ala	Leu	Gln	Tyr	Ala	Asp	Ser	Ala	Leu	Asn	Arg	Leu
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Ala	His	Tyr	Lys	Lys	Tyr	Ala	Arg	His	Pro	Gln	Arg	Phe	Met	Lys
					965					970				975
Val	Gly	Ser	Gly	Ile	Pro	Ala	Glu	Leu	Glu	Trp	Trp	Val	Glu	Pro
			980					985					990	
Asn	Thr	Asp	Phe	His	Val	Ile	Leu	Asp	Val	Arg	Asn	Glu	Ala	Ser
		995						1000					1005	
Ala	Phe	Leu	Gly	Leu	Lys	Lys	Leu	Asp	Ala	Tyr	Thr	Tyr	Asn	Asn
		1010						1015					1020	
Ala	Tyr	Thr	Ala	Leu	Tyr	Lys	Leu	Thr	Gly	Glu	Asp	Gln	Ser	Leu
1025						1030					1035			1040
Gly	Tyr	Cys	Arg	Gln	Leu	Glu	Arg	Ser	Thr	Thr	Asn	Lys	Thr	Val
						1045					1050			1055
Ile	Ile	Leu	Cys	Ile	Leu	Leu	Leu	Val	Ala	Ser	Leu	Cys	Gly	Tyr
			1060						1065					1070
Leu	Leu	Tyr	Val	Arg	Lys	Arg	Leu	Leu	Asn	Arg	Leu	Asn	Leu	Gln
		1075						1080						1085
Val	Leu	Glu	Ile	Asn	Lys	Lys	Val	Phe	Ala	Ser	Ser	Leu	Val	Arg
		1090						1095						1100
Gln	Glu	Ser	Ala	Glu	Ala	Leu	Gln	Arg	Glu	Glu	Asp	Thr	Leu	Lys
1105						1110					1115			1120
Ile	Pro	Gln	Arg	Ile	Val	Asn	Glu	Ser	Phe	Asp	Ser	Met	Asn	Glu
						1125				1130				1135
Leu	Thr	Ile	Glu	Cys	Leu	Gly	Ile	Ala	Val	Tyr	Asn	Glu	Met	Gly
			1140						1145					1150
Arg	Leu	Glu	Phe	Ala	Ser	Thr	Pro	Arg	Met	Asp	Thr	Pro	Pro	Glu
		1155							1160					1165
Ile	Gln	Gln	Cys	Phe	Asp	Asn	Gln	Thr	Tyr	Leu	Ser	Asp	Gly	Asp
		1170							1175					1180
Gln	Ala	Leu	Pro	Leu	Leu	Val	Asp	Ala	Gly	Gly	Lys	His	Gln	Cys
1185						1190					1195			1200
Gly	Val	Leu	Tyr	Leu	Glu	Arg	Gln	Glu	Asp	Ser	Met	Gln	Glu	Ala
						1205								1215
Arg	Leu	Leu	Phe	Gln	Leu	Ile	Ser	Arg	Tyr	Val	Gly	Ile	Val	Val
			1220						1225					1230
Asn	Ala	Val	Val	Arg	Leu	Ala	Thr	Lys	Tyr	Arg	Asp	Ile	Glu	Ala
		1235							1240					1245
His	Glu	Glu	Thr	Arg	Arg	Ala	Ser	Trp	Glu	Asp	Ser	Met	Leu	His
		1250							1255					1260
Gln	Asn	Met	Val	Leu	Asp	Asn	Cys	Leu	Ser	Thr	Ile	Lys	His	Glu
1265						1270					1275			1280
Ile	Tyr	Tyr	Pro	Asn	Lys	Ile	Lys	Gln	Ile	Ile	Gly	Arg	Leu	Asn
						1285					1290			1295
His	Ser	Leu	Ser	Gly	Glu	Glu	Glu	Lys	Glu	Cys	Val	Glu	Thr	Ile
		1300							1305					1310
Glu	Leu	Ile	Glu	Tyr	Tyr	Lys	Gly	Ile	Phe	Arg	Ile	Leu	Ser	Ser
		1315							1320					1325
Ala	Ser	Arg	Gln	Leu	Glu	Glu	Val	Thr	Phe	Arg	Arg	Ala	Thr	Ile
		1330							1335					1340
Val	Thr	Asp	Ile	Met	Ala	Tyr	Ala	Gly	Lys	Tyr	Phe	Lys	Arg	Ile
1345						1350					1355			1360

Arg Gly Val Asn Tyr Lys Ile Thr Leu Thr Ile Glu Pro Leu Glu Ala
 1365 1370 1375
 Lys Val Ile Gly Asp Ile Asn Gln Leu Arg Phe Leu Ile Glu Asn Leu
 1380 1385 1390
 Ile Asp Glu Ala Leu Ser Phe His Gln Asp Gly Glu Leu Val Leu Lys
 1395 1400 1405
 Ala Ile Met Asp Gly Glu Tyr Val Arg Phe Leu Phe Thr Asp Arg Arg
 1410 1415 1420
 Arg Glu Lys Gln Val Glu Glu Leu Asn Gln Leu Phe Tyr Pro Asn Leu
 1425 1430 1435 1440
 Ala Arg Met Thr Ser Gly Glu Lys Gly Glu Leu Arg Gly Thr Glu Tyr
 1445 1450 1455
 Leu Ile Cys Lys Gln Ile Ile Arg Asp His Asp Glu Phe Ala Gly Arg
 1460 1465 1470
 Arg Gly Cys Arg Ile Asn Ala Glu Pro Ala Gln Gly Gly Gly Phe Thr
 1475 1480 1485
 Val Tyr Phe Thr Val Pro Lys Arg
 1490 1495

<210> 8948
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 <212> PRT
 <213> B.fragilis

<400> 8948

Phe Ile Met Asn Arg Thr Leu Gln Pro Glu Ile Gln Glu Leu Val Gln
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 Phe Asn Ile Leu Pro Pro Val Arg Thr Val Met Pro Asn Gly Val Pro
 20 25 30
 Leu Thr Ile Ile Asn Ala Gly Glu Gln Asp Val Val Arg Val Asp Ile
 35 40 45
 Leu Phe Gly Gly Gly Arg Trp Gln Gln Ser Gln Lys Leu Gln Ala Leu
 50 55 60
 Phe Ala Asn Arg Met Leu Arg Glu Gly Ser Arg Lys Tyr Thr Ala Ala
 65 70 75 80
 Glu Ile Ala Glu Lys Leu Asp Tyr Tyr Gly Ala Trp Leu Glu Leu Ser
 85 90 95
 Ser Ser Ala Glu Tyr Ala Tyr Ile Thr Leu Tyr Ser Leu Asn Lys Tyr
 100 105 110
 Phe Ala Glu Thr Leu Asp Val Leu Glu Ser Ile Ile Lys Glu Pro Leu
 115 120 125
 Phe Pro Glu Lys Glu Leu Gly Thr Val Ile Asp Ala Asn Ile Gln Gln
 130 135 140
 Tyr Gln Val Asn Ala Ser Lys Val Asp Phe Leu Ala His Arg Ser Leu
 145 150 155 160
 Leu Arg Ala Leu Tyr Gly Glu Glu His Pro Cys Gly Arg Tyr Val Glu
 165 170 175
 Glu Thr Asp Tyr His His Ile Thr Pro Ala Leu Leu Arg Glu Phe Tyr
 180 185 190
 Asp Thr Tyr Tyr His Ser Gly Asn Cys Tyr Val Tyr Leu Ser Gly Lys
 195 200 205
 Val Thr Asp Glu Ile Thr His Arg Ile Glu Ala Ala Phe Gly Thr Thr
 210 215 220
 His Phe Gly Asn His Gln Val Ala Val Lys Lys Asp Phe Thr Phe
 225 230 235 240
 Val Ser Ile Pro Glu Lys Arg Leu Phe Ile Glu Arg Glu Asp Ala Met
 245 250 255
 Gln Ser Ala Val Lys Leu Gly Thr Thr Thr Ile Met Arg Thr His Pro
 260 265 270

Asp Tyr Leu Lys Leu Arg Val Leu Ile Thr Leu Phe Gly Gly Tyr Phe
 275 280 285
 Gly Ser Arg Leu Met Ser Asn Ile Arg Glu Glu Lys Gly Tyr Thr Tyr
 290 295 300
 Gly Ile Ser Ala Gly Ile Met Phe Ile Arg Ala Thr Val Cys Trp Val
 305 310 315 320
 Ser Val Gln Lys Gln Leu Met Asn Met
 325

<210> 8949

<211> 318

<212> PRT

<213> B.fragilis

<400> 8949

Glu Ile Met Asn Ser His Gln Glu Leu Phe Gly Gly Asn Ile Pro Gln
 1 5 10 15
 Asp Val Thr Gly Lys Gln Gly Glu Asn Ala Ile Phe Ile Val Tyr Gly
 20 25 30
 Leu Lys Gln Ser Asp Asn Thr Ile Lys Gln Val Lys Asp Leu Cys Ala
 35 40 45
 Asn Phe Ser Ala Leu Ile Arg Ser Met Arg Asn Arg Phe Pro Glu Met
 50 55 60
 Gln Phe Ser Cys Thr Ile Gly Phe Gly Ala Asp Ala Trp Lys Gln Leu
 65 70 75 80
 Phe Pro Glu Gln Gly Asn Pro Lys Glu Leu Lys Thr Phe Glu Thr Ile
 85 90 95
 Lys Gly Ala Lys Tyr Thr Ala Val Ser Thr Pro Gly Asp Ile Leu Leu
 100 105 110
 His Ile Arg Ala Lys Gln Met Gly Leu Cys Phe Glu Phe Ala Ser Ile
 115 120 125
 Ile Asp Glu Lys Leu Lys Gly Val Val Asp Ser Ile Asp Glu Thr His
 130 135 140
 Gly Phe Arg Tyr Met Asp Gly Lys Ala Ile Ile Gly Phe Val Asp Gly
 145 150 155 160
 Thr Glu Asn Pro Ala Val Asp Glu Asn Pro Tyr His Phe Ala Val Ile
 165 170 175
 Gly Asp Glu Asp Pro Asp Phe Ile Gly Ser Tyr Val Phe Val Gln
 180 185 190
 Lys Tyr Ile His Asp Met Thr Ala Trp Asn Ser Leu Pro Val Glu Ala
 195 200 205
 Gln Glu Lys Val Ile Gly Arg His Lys Tyr Asn Asp Val Glu Leu Ser
 210 215 220
 Asp Glu Glu Lys Pro Gln Asn Ala His Asn Ala Val Thr Asn Ile Gly
 225 230 235 240
 Asp Asp Leu Lys Ile Val Arg Ala Asn Met Pro Phe Ala Asn Thr Ser
 245 250 255
 Lys Gly Glu Tyr Gly Thr Tyr Phe Ile Gly Tyr Ala Ser Thr Phe Ser
 260 265 270
 Thr Thr His Lys Met Leu Glu Asn Met Phe Ile Gly Asp Pro Val Gly
 275 280 285
 Asn Thr Asp Arg Leu Leu Asp Phe Ser Thr Pro Ile Thr Gly Thr Leu
 290 295 300
 Phe Phe Ala Pro Ser Tyr Asp Leu Leu Ala Lys Leu Gly Glu
 305 310 315

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<211> 238

<212> PRT

<213> B.fragilis

<400> 8950

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Thr Asp Met Lys Ile Arg Asn Leu Met Val Ala Ala Thr Leu Leu Val
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Thr Ala Gly Ala Met Ala Gln Asn Gln Asp Cys Ala Phe Phe Phe Pro
      20      25      30
Asn Gln Glu Gly Glu Gln Ile Thr Arg Asn Cys Tyr Thr Ala Asp Gly
      35      40      45
Lys Leu Thr Asn Ile Leu Val Tyr Arg Val Asp Gln Ala Tyr Glu Tyr
      50      55      60
Pro Ser Gly Met Glu Val Val Ala Asn Tyr Thr Phe Thr Asp Ala Thr
65      70      75      80
Gly Lys Thr Leu Asn Ser Gly Gln Met Val Ala Arg Cys Ser Asp Gly
      85      90      95
Asn Phe Ser Met Ser Met Gly Asp Val Ala Thr Phe Pro Thr Ala Leu
      100     105     110
Asn Met Met Asn Ala Asp Val Tyr Met Met Gly Asp Leu Met Asn Tyr
      115     120     125
Pro Asp Ala Phe Ser Asn Pro Met Asn Pro Gly Asp Asp Asp Glu Phe
      130     135     140
Asp Asp Gly Thr Leu Arg Leu Tyr Gln Lys Gly Asn Lys Asn Asn Arg
145      150     155     160
Ala Glu Ile Ser Val Phe Asp Arg Glu Phe Val Thr Thr Glu Thr Val
      165     170     175
Asn Thr Pro Ala Gly Ala Phe Tyr Cys Thr Lys Val Lys Tyr Glu Met
      180     185     190
Asn Ile Trp Thr Pro Lys Glu Thr Ile Lys Gly Tyr Gly Tyr Glu Trp
      195     200     205
Tyr Ala Pro Asn Ile Gly Ile Val Arg Ser Glu Gln Tyr Asn Asn Lys
      210     215     220
Lys Glu Leu Gln Ser Tyr Ser Val Leu Glu Arg Ile Lys Lys
225      230     235

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<210> 8951

<211> 344

<212> PRT

<213> B.fragilis

<400> 8951

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Arg Ile Met Lys Gln Lys Thr Ile His Ile Glu Asn Leu Ser Ile Gly
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Tyr Leu Gly Lys Thr Asp Val Lys Val Val Ala Asp Arg Ile Asn Ala
      20      25      30
Gly Ile Asn Cys Gly Glu Leu Thr Cys Leu Leu Gly Ala Asn Gly Val
      35      40      45
Gly Lys Ser Thr Leu Leu Arg Thr Leu Ser Ala Phe Gln Pro Lys Leu
      50      55      60
Gly Gly Lys Ile Glu Ile Val Gly Lys Glu Ile Asp Ala Tyr Thr Asp
65      70      75      80
Lys Glu Leu Ser Thr Val Ile Ser Val Val Leu Thr Glu Lys Cys Asp
      85      90      95
Ile Arg Asn Met Thr Val His Glu Leu Val Gly Leu Gly Arg Ser Pro
      100     105     110
Tyr Thr Gly Phe Trp Gly Thr Leu Arg Gly Glu Asp Lys Glu Val Val
      115     120     125
Glu Arg Ser Ile Ala Leu Val Lys Ile Gln Asn Leu Ala His Arg Met
      130     135     140
Val His Thr Leu Ser Asp Gly Glu Arg Gln Lys Val Met Ile Ala Lys

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145		150		155		160
Ala	Leu	Ala	Gln	Glu	Thr	Pro
		165		170		175
Phe	Leu	Asp	Phe	Pro	Ser	Lys
		180		185		190
Leu	Ser	Arg	Gln	Thr	Asn	Lys
		195		200		205
Glu	Leu	Ala	Leu	Gln	Ile	Ala
		210		215		220
Asn	Gly	Val	Thr	Ile	Gly	Thr
225				230		235
Leu	Ser	Ser	Phe	Phe	Ala	Arg
				245		250
Gly	Leu	Phe	Arg	Val	Asp	Asn
				260		265
Gly	His	Gly	Gln	Lys	Tyr	Ala
				275		280
Gly	Ile	Leu	Ala	Asn	Arg	Thr
290				295		300
Gly	Asp	Leu	Lys	Asp	Gly	Asn
305				310		315
Glu	Ala	Val	Thr	Leu	Asn	Ser
				325		330
Ala	Gly	Ser	Ala	Glu	Arg	Ala
				340		

<210> 8952
 <211> 725
 <212> PRT
 <213> B.fragilis

<400> 8952
Thr Leu Met Lys Lys Leu Met Val Ile Leu Ile Thr Gly Leu Leu Tyr
1 5 10 15
Met Ser Cys Thr Asp Ser Met Glu Val Ser Gly Asp Ala Asp Arg Asn
20 25 30
Asn Thr Glu Asp Val Ser Val Arg Leu Val Ile Thr Ile Pro Ala Ser
35 40 45
Thr Thr Tyr Ala Arg Thr Arg Gly Thr Phe Ala Thr Thr Asp His Glu
50 55 60
Ser Lys Ile Ser Glu Ile Gln Val Leu Val Phe Glu Glu Gly Lys Tyr
65 70 75 80
Lys Tyr Arg Val Pro Gly Ile Ser Ile Asn Asn Thr Ser Ser Ala Ala
85 90 95
Ser Phe Lys Ala Leu Leu Lys Ser Ser Ser Ser Pro Leu Lys Leu Leu
100 105 110
Ile Leu Ala Asn Ala Thr Asp Ala Val Ile Ala Asn Glu Pro Ser Val
115 120 125
Asp Asp Ser Glu Asp Leu Val Lys Lys Asn Ile Asn Leu Arg Phe Asn
130 135 140
Asn Ile Thr Ser Asp Phe Pro Met Tyr Gly Glu Tyr Glu Leu Pro Gly
145 150 155 160
Gly Leu Glu Ala Thr Val Ile Asn Asn Ile Thr Gly Ile Lys Met Leu
165 170 175
Arg Ser Ile Ala Arg Val Asp Val Lys Ala Thr Glu Val Ala Asn Phe
180 185 190
Lys Leu Ser Gly Val Lys Ala Tyr Arg Ala Asn Asp His Leu Gln Ile
195 200 205
Ile Pro Asp Glu Thr Gly Val Val Arg Val Thr Leu Pro Ser Val Pro

210	215	220
Ala Gly Ser Ser Gly Asn Val Asn Ser Ile Leu Tyr Pro Val Pro Ala		
225	230	235
Glu Asn Leu Asn Glu Phe Ser Ala Gln Leu Tyr Leu Pro Glu Ala Asp		240
	245	250
Ser Pro Thr Pro Asp Asn Arg Val Ser Gln Ala Thr Cys Ile Val Val		255
	260	265
Glu Gly Tyr Tyr Glu Gly Ser Asp Gln Pro Gly Tyr Tyr Arg Met Asp		270
	275	280
Phe Asp Pro Asp Asn Val Glu Asn Ala Phe Gly Gln Val Leu Arg Asn		285
	290	295
His Lys Tyr Ile Phe Asn Ile Lys Lys Val Ser Gly Pro Gly Trp Gly		300
305	310	315
Ser Pro Asp Glu Ala Ala Asn Asn Arg Ser Ala His Ile Val Ala Glu		320
	325	330
Val Gln Ala Trp Asp Asp Tyr Thr Ile Asp Met Asn Phe Asp Gly Glu		335
	340	345
His His Phe Gly Val Ser Thr Arg Glu Ile Val Leu Lys Asn Lys Ala		350
	355	360
Gly Ser Ala Gly Ile Ile Asn Val Ser Thr Asp Leu Pro Asp Tyr Thr		365
	370	375
Leu Gln Trp Ala Asp Ala Ala Gly Thr Pro Thr Gly Thr Gly Ser Gln		380
385	390	395
Ser Leu Ala Asn Glu Tyr Phe Thr Val Thr Lys Ala Gln Asn Gly Ser		400
	405	410
Gln Leu Val Ile Thr Ala Leu Gln Ser Asn Ser Thr Asn Asp Thr Ser		415
	420	425
Arg Ile Gln Asn Phe Val Ile Thr Ala His Arg Trp Arg Ile Leu Val		430
	435	440
Asn Ile Gln Gln Lys Tyr Asp Val Ala Ala Tyr Gln Thr Ile His Leu		445
	450	455
Leu Thr Phe Asn Ala Gly Leu Gly Tyr Leu Gly Thr Asn Ile Ile Gly		460
465	470	475
Ser Gly Ser Ala Glu Ala Arg Ala Thr Gly Leu Arg Gly Ile Leu Asn		480
	485	490
Asn Gln Asn Asn Phe Gly Pro Thr Gly Thr Val Glu Cys Gly Gly Tyr		495
	500	505
Asn Leu Ile Gly Val Asn Ala Asn Tyr Asn Asn Leu Thr Asp Ala Leu		510
	515	520
Phe Ala Ser Phe Asp Val Val Tyr Val His Tyr Met Gly Asn Leu Leu		525
	530	535
Phe Gly Thr Ser Asp Ala Gln Lys Ala His Asn Trp Val Lys Ser Lys		540
545	550	555
Lys Asn Arg Val Leu Ile Val Ser Tyr Asp Ala Leu Asp Val Ser Gln		560
	565	570
Asn Leu Leu Lys Glu Ile Leu Gly Gly Asn Asn Gly Ile Ser Phe Leu		575
	580	585
Thr Ser Asn Thr Gly Pro Tyr Pro Leu Ala Thr Pro Glu Asn Gly Asn		590
	595	600
Ser Tyr Phe Ser Thr Thr Gly Pro Phe Thr Ser Ala Pro Tyr Thr Pro		605
	610	615
Ile Asn Thr Asp Phe Ser Leu Arg Asn Tyr Asp Ala Tyr His Gly Glu		620
625	630	635
Ile Gln Leu Asn Thr Glu Ala Ser Lys Gly Ile Thr Pro Ile Leu Met		640
	645	650
Gly Pro Ala Gly Gly Ile Val Leu Gly Ile Asp Tyr Ser Arg Arg Ile		655
	660	665
Val Tyr Trp Gly Asp Thr Asp Ile Gly Ser Ser Ala Ser Ser Ser Thr		670
	675	680
		685

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100

Ser Thr Thr Asp Asn Arg Ile Asn Asn Asn Ser Gly Thr Ile Asn Asn
 690 695 700
 Asn Ala Ser Lys Leu Ile Ala Asn Val Phe Ala Trp Ile Ala Glu Thr
 705 710 715 720
 Val Leu Tyr Gly Glu
 725

<210> 8953
 <211> 428
 <212> PRT
 <213> B.fragilis

<400> 8953

Gln Ile Met Lys Arg Asp Asp Leu Ile Phe Asp Ile Ile Glu Lys Glu
 1 5 10 15
 His Gln Arg Gln Leu Lys Gly Ile Glu Leu Ile Ala Ser Glu Asn Phe
 20 25 30
 Val Ser Asp Gln Val Met Glu Ala Met Gly Ser Cys Leu Thr Asn Lys
 35 40 45
 Tyr Ala Glu Gly Tyr Pro Gly Lys Arg Tyr Tyr Gly Gly Cys Glu Val
 50 55 60
 Val Asp Gln Ser Glu Gln Ile Ala Ile Asp Arg Leu Lys Glu Ile Phe
 65 70 75 80
 Gly Ala Glu Trp Ala Asn Val Gln Pro His Ser Gly Ala Gln Ala Asn
 85 90 95
 Ala Ala Val Phe Leu Ala Val Leu Asn Pro Gly Asp Lys Phe Met Gly
 100 105 110
 Leu Asn Leu Ala His Gly Gly His Leu Ser His Gly Ser Leu Val Asn
 115 120 125
 Thr Ser Gly Ile Ile Tyr Thr Pro Cys Glu Tyr Asn Leu Lys Gln Glu
 130 135 140
 Thr Gly Arg Val Asp Tyr Asp Gln Met Glu Glu Val Ala Leu Arg Glu
 145 150 155 160
 Lys Pro Lys Met Ile Ile Gly Gly Gly Ser Ala Tyr Ser Arg Glu Trp
 165 170 175
 Asp Tyr Lys Arg Met Arg Glu Ile Ala Asp Lys Val Gly Ala Ile Leu
 180 185 190
 Met Ile Asp Met Ala His Pro Ala Gly Leu Ile Ala Ala Gly Leu Leu
 195 200 205
 Asp Asn Pro Val Lys Tyr Ala His Ile Val Thr Ser Thr Thr His Lys
 210 215 220
 Thr Leu Arg Gly Pro Arg Gly Gly Val Ile Met Met Gly Lys Asp Phe
 225 230 235 240
 Pro Asn Pro Trp Gly Lys Lys Thr Pro Lys Gly Glu Ile Lys Met Met
 245 250 255
 Ser Gln Leu Leu Asp Ser Ala Val Phe Pro Gly Ile Gln Gly Gly Pro
 260 265 270
 Leu Glu His Val Ile Ala Ala Lys Ala Val Ala Phe Gly Glu Cys Leu
 275 280 285
 Gln Pro Glu Tyr Lys Glu Tyr Gln Lys Gln Val Gln Lys Asn Ala Ala
 290 295 300
 Val Leu Ala Gln Ala Leu Ile Asp Arg Gly Phe Thr Ile Val Ser Gly
 305 310 315 320
 Gly Thr Asp Asn His Ser Met Leu Val Asp Leu Arg Ser Lys Tyr Pro
 325 330 335
 Thr Leu Thr Gly Lys Val Ala Glu Lys Ala Leu Val Ser Ala Asp Ile
 340 345 350
 Thr Val Asn Lys Asn Met Val Pro Phe Asp Ser Arg Ser Ala Phe Gln
 355 360 365

Thr Ser Gly Ile Arg Leu Gly Thr Pro Ala Ile Thr Thr Arg Gly Ala
 370 375 380
 Lys Glu Asp Leu Met Leu Glu Ile Ala Glu Met Ile Glu Thr Val Leu
 385 390 395 400
 Ser Asn Val Glu Asn Glu Glu Val Ile Ala Gln Val Arg Ala Arg Val
 405 410 415
 Asn Lys Thr Met Glu Lys Tyr Pro Ile Phe Ala Tyr
 420 425

<210> 8954
 <211> 467
 <212> PRT
 <213> B.fragilis

<400> 8954

Tyr Ile His Leu Asn Lys Lys Ile Met Lys Thr Ser Lys Ile Phe Met
 1 5 10 15
 Thr Thr Leu Val Ala Leu Thr Met Ala Ala Cys Ser Asn Asp Asn Asp
 20 25 30
 Trp Val Asp Gln Ser Ser Asn Pro Asp Val Ile Ala Pro Asp Ala Tyr
 35 40 45
 Ala Ser Phe Ser Ile Asn Ile Pro His Ala Ser Lys Thr Arg Ala Val
 50 55 60
 Ser Thr Asp Pro Gly Ile Ala Ala Glu Asn Thr Val Lys Ser Leu His
 65 70 75 80
 Val Phe Ile Tyr Asp Ala Glu Ser Pro Asn Thr Pro Thr Val Ala Glu
 85 90 95
 Phe Thr Val Ala Gly Gly Thr Leu Thr Gln Lys Pro Ala Gly Ser Ser
 100 105 110
 Thr Trp Met Thr Ser Gln Pro Ile Ser Thr Lys Lys Thr Asp Lys Tyr
 115 120 125
 Ile Phe Ala Gly Val Asn Leu Asn Thr Glu Ile Val Asn Tyr Ile Thr
 130 135 140
 Ser Asn Gly Leu Gly Ala Phe Ser Tyr Lys Asp Phe Thr Gln Glu Ile
 145 150 155 160
 Thr Lys Leu Ala Asp Gln Thr Asn Gly Phe Val Met Phe Asn Ser Ala
 165 170 175
 Tyr Pro Thr Leu Thr Pro Ala Ala Asp Leu Tyr Glu Lys Lys Ser Glu
 180 185 190
 Ala Glu Asn Asn His Ile Thr Ile Ser Val Asn Arg Ile Thr Ala Lys
 195 200 205
 Ala Ala Val Phe Gln Ser Gln Ser Phe Val Val Asn Gly Gly Gly Thr
 210 215 220
 Met Thr Asp Leu Lys Phe Gly Trp Arg Asn Leu Asn Lys Lys Phe Tyr
 225 230 235 240
 Phe Ile Gln Asp Asn Arg Asp Thr Leu Ile Lys Asp Tyr Asn Trp Ala
 245 250 255
 Asn Tyr Thr Ala Glu Asp Phe Thr Arg Gly Thr Asp Ala Ile Asn Val
 260 265 270
 Tyr Ala Ser Ala Asp Val Pro Thr Ser Phe Ser Tyr Ala Thr Glu Asn
 275 280 285
 Ala Phe Gln Tyr Ile Ser Gly Thr Ser Asn Val Asp Ala Ala Thr Phe
 290 295 300
 Ile Ser Val Ser Gly Val Phe Thr Pro Thr Asn Ile Ile Ser Ala Lys
 305 310 315 320
 Lys Asn Pro Pro Thr Val Ala Ala Asp Phe Glu Ile Ile Val Asn Pro
 325 330 335
 Lys Pro Ala Asp Lys Thr Phe Phe Val Val Arg Thr Ala Asp Gly Val
 340 345 350

Ala Asn Tyr Phe Ile Asp Gly Pro Thr Ala Glu Lys Phe Ala Glu Leu
 355 360 365
 Cys Ala Ala Asn Thr Pro Gln Met Pro Ser Ile Asn Gly Ile Tyr Leu
 370 375 380
 Leu Ser Glu Asn Thr Tyr Ser Asn Gly Leu Cys Tyr Tyr His Ile Phe
 385 390 395 400
 Val Asn Gly Asp Ala Val Thr Pro Gln Ala Pro Tyr Asn Ile Tyr Arg
 405 410 415
 Asn Gln Tyr Phe Lys Ile Asn Ile Asn Ser Ile Gln Ala Pro Gly Asn
 420 425 430
 Pro Ser Asp Asn Phe Asp Arg Gly Glu Pro Ile Lys Pro Asn Ser Trp
 435 440 445
 Ile Gly Val Asp Ile Gln Ile Ile Pro Trp Glu Val Ile Glu Glu Asp
 450 455 460
 His Asp Leu
 465

<210> 8955
 <211> 468
 <212> PRT
 <213> B.fragilis

<400> 8955

Gln Glu Ile Asp Ser Tyr Gly Gly Arg Phe Gly Ile Tyr His Val Cys
 1 5 10 15
 Leu Thr Leu Thr Ser Gln Ala Met Lys Ile Gly Arg Lys Ile Ala Leu
 20 25 30
 Phe Tyr Thr Leu Val Thr Val Leu Thr Thr Met Ala Val Ile Gly Val
 35 40 45
 Phe Tyr Leu Phe Ser Ser Arg Tyr Ile Asp Gly Leu Tyr Arg Ser Tyr
 50 55 60
 Leu Arg Glu Lys Ala Phe Leu Thr Ala Gln Lys His Trp Glu Arg Asp
 65 70 75 80
 Glu Val Asp Glu Gln Ser Tyr Gln Thr Ile Gln Arg Lys Tyr Asp Glu
 85 90 95
 Leu Leu Pro Glu Ala Lys Glu Ile Leu Leu Asp Met Asp Ser Asp Ala
 100 105 110
 Val Val Arg Asp Thr Leu Asn Lys Tyr Leu Ser Ala Ser Gln Gln Lys
 115 120 125
 Gln Leu Leu Glu Ser Lys Glu Met Ser Ser Val Ser Phe Val Tyr Gln
 130 135 140
 Asp Met Leu Gly Ala Ala Leu Tyr Tyr Pro Asp Asn Glu Gly Asn Phe
 145 150 155 160
 Ile Val Ile Ile Met Ser His Asn Ser Tyr Gly Val Lys Ile Gln Glu
 165 170 175
 His Leu Leu Leu Leu Ser Ala Phe Leu Val Leu Cys Ser Ser Val Leu
 180 185 190
 Ile Phe Phe Ile Gly Gln Leu Tyr Ser Thr Arg Ile Leu Ile Pro Leu
 195 200 205
 Gln His Val Leu Leu Gln Leu Lys Gln Ile Arg Gly Asn Ser Leu Asn
 210 215 220
 Arg Arg Leu Lys Thr Thr Gly Asn Lys Asp Glu Leu Asp His Leu Ile
 225 230 235 240
 Glu Thr Leu Asn Ser Met Leu Asp Arg Ile Asp Thr Ala Phe Arg Ala
 245 250 255
 Glu Lys Ser Phe Val Ser His Ala Ser His Glu Leu Asn Asn Pro Ile
 260 265 270
 Thr Ala Ile Gln Gly Glu Cys Glu Ile Ser Leu Leu Lys Glu Arg Ser
 275 280 285

Thr Asp Glu Tyr Ile Glu Ala Leu Arg Arg Ile Ala Gly Glu Ser Lys
 290 295 300
 Arg Leu Ser Asn Leu Ile Arg His Leu Leu Phe Leu Ser Arg Gln Glu
 305 310 315 320
 Glu Asp Ile Arg Lys Asn Asn Val Glu Glu Ile Arg Leu Ala Asp Leu
 325 330 335
 Leu Glu Glu Ala Gly Ala Ala Asn Pro Arg Ile Arg Leu Gln Tyr Pro
 340 345 350
 Glu Asp Ala Ala Arg Tyr Ala Val Val Ser Ala Ser Pro Tyr Leu Phe
 355 360 365
 Lys Ile Ala Leu Gln Asn Val Ile Asp Asn Ala Cys Lys Tyr Ser Gln
 370 375 380
 Gly Glu Val Leu Ile Arg Leu Tyr Lys Glu Asp Glu Arg Trp Gly Ile
 385 390 395 400
 Ala Val Lys Asp Ser Gly Ile Gly Ile Pro Ala Asp Glu Met Glu Leu
 405 410 415
 Ile Phe Gln Ser Phe Tyr Arg Gly Ser Asn Thr Arg Glu Tyr Ala Gly
 420 425 430
 Gln Gly Ile Gly Leu Ser Leu Ser Met Lys Ile Phe Ser Val Tyr Arg
 435 440 445
 Gly Lys Val Ser Ile Arg Ser Glu Glu Gly Lys Gly Thr Glu Val Arg
 450 455 460
 Val Val Phe Ala
 465

<210> 8956

<211> 312

<212> PRT

<213> B.fragilis

<400> 8956

Thr Tyr Asn Asp Met Glu Asn Arg Ser Leu Val Thr Ile Ala Glu His
 1 5 10 15
 Ser Arg Glu Lys Ile Leu Tyr Met Leu Glu Met Ala Lys Gln Phe Glu
 20 25 30
 Lys Asn Pro Asn Arg Arg Leu Leu Glu Gly Lys Val Val Ala Thr Leu
 35 40 45
 Phe Phe Glu Pro Ser Thr Arg Thr Arg Leu Ser Phe Glu Thr Ala Ala
 50 55 60
 Asn Arg Leu Gly Ala Arg Val Ile Gly Phe Ser Asp Pro Lys Ala Thr
 65 70 75 80
 Ser Ser Ser Lys Gly Glu Thr Leu Lys Asp Thr Ile Met Met Val Ser
 85 90 95
 Asn Tyr Ala Asp Val Ile Val Met Arg His Tyr Leu Glu Gly Ala Ala
 100 105 110
 Arg Tyr Ala Ser Glu Val Ala Pro Val Pro Ile Val Asn Ala Gly Asp
 115 120 125
 Gly Ala Asn Gln His Pro Ser Gln Thr Met Leu Asp Leu Tyr Ser Ile
 130 135 140
 Tyr Lys Thr Gln Gly Thr Leu Glu Asn Leu Asn Ile Tyr Leu Val Gly
 145 150 155 160
 Asp Leu Lys Tyr Gly Arg Thr Val His Ser Leu Leu Met Ala Met Arg
 165 170 175
 His Phe Asn Pro Thr Phe His Phe Ile Ala Pro Glu Glu Leu Lys Met
 180 185 190
 Pro Glu Glu Tyr Lys Ile Tyr Cys Lys Glu His Asn Ile Lys Tyr Val
 195 200 205
 Glu His Thr Asp Phe Asn Glu Glu Val Ile Lys Asp Ala Asp Ile Leu
 210 215 220

Tyr Met Thr Arg Val Gln Arg Glu Arg Phe Thr Asp Leu Met Glu Tyr
 225 230 235 240
 Glu Arg Val Lys Asn Val Tyr Ile Leu Lys Ala Lys Met Leu Glu Asn
 245 250 255
 Thr Arg Ser Asn Leu Arg Ile Leu His Pro Leu Pro Arg Val Asn Glu
 260 265 270
 Ile Ala Tyr Asp Val Asp Asp Ser Pro Lys Ala Tyr Tyr Phe Gln Gln
 275 280 285
 Ala Gln Asn Gly Leu Tyr Ala Arg Gln Ala Ile Leu Cys Asp Val Leu
 290 295 300
 Gly Ile Thr Leu Gln Asp Ile Leu
 305 310

<210> 8957

<211> 300

<212> PRT

<213> B.fragilis

<400> 8957

Lys Lys Lys Glu Met Lys Asn Ile Leu Ile Ile Gly Ala Asn Gly Phe
 1 5 10 15
 Thr Gly Arg Arg Ile Leu Asn Asp Leu Ser Val Asn Pro Ile Tyr His
 20 25 30
 Val Thr Gly Cys Ser Leu Arg Asp Asp Ile Cys Pro Gly Lys Asp Tyr
 35 40 45
 Arg Phe Val Arg Thr Asp Ile Arg Asp Glu Asn Glu Val Arg Lys Leu
 50 55 60
 Phe Lys Glu Cys Arg Pro Asp Ile Val Ile Asn Thr Ser Ala Leu Ser
 65 70 75 80
 Val Pro Asp Tyr Cys Glu Thr His His Ala Glu Ala Glu Ala Thr Asn
 85 90 95
 Val Thr Ala Val Glu Thr Ile Ala His Val Cys Glu Gln Tyr Gly Ser
 100 105 110
 Arg Phe Ile His Leu Ser Thr Asp Phe Val Phe Asp Gly Lys Ser Ile
 115 120 125
 Arg Leu Tyr Lys Glu Glu Asp Glu Ala Ile Pro Val Asn Tyr Tyr Gly
 130 135 140
 Val Thr Lys Leu Lys Ala Glu Lys Ile Ile Ala Ser Ile Cys Ser Asn
 145 150 155 160
 Tyr Ala Ile Val Arg Val Val Val Val Tyr Gly Lys Ala Leu Pro Gly
 165 170 175
 Gln His Gly Asn Ile Leu Gln Leu Val Ala Asn Arg Leu Arg Asn Gly
 180 185 190
 Glu Thr Ile Arg Val Val Ser Asp Gln Trp Arg Thr Pro Thr Phe Val
 195 200 205
 Gly Asp Ile Ser Val Gly Val Glu Lys Leu Met Phe His Thr Ala Asn
 210 215 220
 Gly Ile Tyr His Ile Cys Gly Ser Glu Cys Leu Thr Ile Ala Glu Ile
 225 230 235 240
 Ala Tyr Arg Val Ala Asp Phe Leu Lys Leu Asp Arg Ser Leu Ile Glu
 245 250 255
 Pro Val Thr Thr Glu Glu Met Lys Glu Ala Thr Pro Arg Pro Arg Phe
 260 265 270
 Ser Gly Leu Ser Ile Glu Lys Ala Lys Ala Glu Ile Gly Tyr Thr Pro
 275 280 285
 Arg Thr Leu Glu Glu Gly Met Glu Ala Ser Leu Phe
 290 295 300

<210> 8958

<211> 244
 <212> PRT
 <213> B.fragilis

<400> 8958

Asn Ser Met Glu Asp Lys Lys Phe Lys Val Ile Ile Val Glu Asp Val
 1 5 10 15
 Lys Leu Glu Leu Lys Gly Thr Glu Glu Ile Phe Arg His Glu Ile Pro
 20 25 30
 Asn Ala Glu Val Ile Gly Thr Ala Met Thr Glu Asn Glu Phe Trp Pro
 35 40 45
 Leu Met Glu Thr Gln Leu Pro Asp Met Val Leu Leu Asp Leu Gly Leu
 50 55 60
 Glu Gly Ser Thr Thr Ile Gly Val Asp Ile Cys Arg Asn Ile Phe Lys
 65 70 75 80
 Arg Tyr Pro Gly Val Arg Val Leu Ile Phe Thr Gly Glu Ile Leu Asn
 85 90 95
 Glu Lys Leu Trp Val Asp Val Leu Asn Ala Gly Ala Asp Gly Ile Ile
 100 105 110
 Leu Lys Thr Gly Glu Leu Leu Thr Lys Thr Asp Val Gln Ala Val Met
 115 120 125
 Asp Gly Lys Lys Leu Val Phe Asn Tyr Pro Ile Leu Glu Lys Ile Val
 130 135 140
 Glu Arg Phe Lys Lys Ser Val Ala Asn Asp Ala Lys Arg Gln Glu Ala
 145 150 155 160
 Val Ile Ser Tyr Asp Ile Asp Glu Tyr Asp Glu Arg Phe Leu Arg His
 165 170 175
 Leu Ala Leu Gly Tyr Thr Lys Glu Met Ile Ala Asn Leu Lys Gly Met
 180 185 190
 Pro Phe Gly Val Lys Ser Leu Glu Lys Arg Gln Asn Asp Leu Ile Gly
 195 200 205
 Arg Leu Phe Pro Gln Gly Glu Arg Val Gly Val Asn Ala Thr Arg Leu
 210 215 220
 Val Val Arg Ala Leu Glu Leu Arg Ile Ile Asp Leu Asp Asn Leu Glu
 225 230 235 240
 Ala Asp Glu Glu

<210> 8959
 <211> 181
 <212> PRT
 <213> B.fragilis

<400> 8959

His Arg Thr Asp Met Lys Lys Leu Ile Phe Phe Leu Leu Leu Leu
 1 5 10 15
 Ser Thr Ala Ser Leu Ser Ala Gln Ser Glu Gln Pro Ser Asp Ser Ile
 20 25 30
 Arg His Leu Pro Ser Thr Val Lys Gln Tyr Gly Asp Phe Leu Ile Asp
 35 40 45
 Met Gly Leu Phe Ile Ala Ala Pro Pro Lys Leu Pro Lys Tyr Lys Phe
 50 55 60
 Glu Leu Pro Asp Ala Ser Lys Asp Tyr Asn Arg Ile Phe Ser Leu Asn
 65 70 75 80
 Pro Asp Val Ile Met Thr Gln Gly Leu Ser Asn Val Phe Thr Pro Ser
 85 90 95
 Leu Ser Tyr Gly Phe Gly Trp Gly Gly His Asp Phe Phe Ser Ser Pro
 100 105 110
 Gln Gln Leu Gln Met Gly Ser Phe Lys Leu Lys Asn Gly Met Arg Leu

115 120 125
 Asn Thr Tyr Gly Glu Tyr Asn Ala Asp Gly Lys Lys Val Pro Asn Pro
 130 135 140
 Ala Ala Met Pro Trp Glu Lys Asn Asn Phe Lys Gly Ala Phe Glu Met
 145 150 155 160
 Lys Ser Ser Asp Gly Asn Phe Gly Ile Arg Ile Glu Val Gln Gln Gly
 165 170 175
 Arg Asn Tyr Pro Tyr
 180

<210> 8960
 <211> 69
 <212> PRT
 <213> B.fragilis

<400> 8960
 Leu Arg Leu Phe Ile Arg Thr Cys Cys Pro Ile Ile Arg Leu Ser Ile
 1 5 10 15
 Thr Asn Asp Ser Ile Asn Leu Ser Asp Glu Thr Thr Asp Asn Thr Ser
 20 25 30
 Tyr Ala Ala Tyr Ser Arg Ile Tyr Phe Cys Leu Phe Ser Ala Glu Ser
 35 40 45
 Val Val Gly Leu Gly Phe His Ser His Arg Phe Gly Met Glu His Thr
 50 55 60
 Leu Gly Arg Asn Gly
 65

<210> 8961
 <211> 75
 <212> PRT
 <213> B.fragilis

<400> 8961
 Gly Leu Gly Leu Phe Ser Gln Ile Gln Arg Trp Thr Phe Ser Arg Lys
 1 5 10 15
 Asn Pro Trp Arg Leu Met Asn Gly Val Asn Lys Asp Phe Ser Ile Ile
 20 25 30
 Thr Ser His Met Asn Leu Leu Ser Asn Tyr Ala Thr Ile Gly Asn Val
 35 40 45
 Cys Lys Asp Val Tyr Leu Phe Ser Lys Leu Arg His Lys Leu Phe Thr
 50 55 60
 Ser Ser Cys Cys Arg Leu Lys Lys Trp Ile Arg
 65 70 75

<210> 8962
 <211> 72
 <212> PRT
 <213> B.fragilis

<400> 8962
 Gln Glu Pro Cys Phe Ser His Leu His Thr Ile Cys Leu Leu Asn Ser
 1 5 10 15
 Glu Ser Asn Ser Tyr Ser Pro Tyr Ser Thr Val Ser Ala Ile Gln Ala
 20 25 30
 Lys Thr Leu Ala Met Ser Leu Asp Ala Leu Leu Leu Met Val Pro Glu
 35 40 45
 Leu Leu Phe Ile Arg Leu Ser Val Val Asp Val Glu Leu Asp Ala Glu
 50 55 60
 Leu Pro Ile Ser Val Ser Pro Gln

65

70

<210> 8963
 <211> 318
 <212> PRT
 <213> B.fragilis

<400> 8963

Gly Arg Arg Leu Asn Ile Phe Ser Leu Lys Lys Pro Val Lys Phe Asn
 1 5 10 15
 Lys Gln Phe Val Thr Asp Ala Asp Ala Trp Trp Lys Ala Asp Asn Gly
 20 25 30
 Asn Phe Gly Ile Ile Leu Pro Pro Thr Gly Ser Leu Pro Ala Val Gly
 35 40 45
 Ser Pro Met Ser Pro Trp Ser Trp Asp Phe Pro Gly Gly Ser Gly Ser
 50 55 60
 Pro Leu Arg Ile Ser Asp Tyr Ala Gly Tyr Asn Pro Lys Ala Pro His
 65 70 75 80
 Leu Phe Ser Met His Pro Asp Pro Gly Leu Tyr Pro Asn Ser Gln Phe
 85 90 95
 Arg Cys Ser Ile Leu Leu Arg Gln Asn Ala Glu Ile Ser Ile Asn Asn
 100 105 110
 Ile Ala Asp Ile Ser Arg Ala Tyr Met Gly Val Val Val Arg His Gln
 115 120 125
 Ala Asn Gly Glu Leu Arg Phe Arg Thr Leu Asn Arg Ser Val Met Glu
 130 135 140
 Met Gln Gln Gln Glu Tyr Ala Val Val Leu Asp Val Pro Asn Trp Pro
 145 150 155 160
 Asp Gly Lys Val Asp Val Tyr Met Val Ala Ser Tyr Ala Glu Ala Ser
 165 170 175
 Glu Gln Ser Tyr Ser Ser Ile Asn Val Thr Leu Phe Ser Met Asn Gln
 180 185 190
 Gly Pro Leu Glu Thr Ala Tyr Met Val Lys Thr Leu Ala Lys Pro Val
 195 200 205
 Pro Asn Ser Phe Lys Phe Asp Tyr Lys Val Val Asn Asp Phe Ala Asn
 210 215 220
 Glu Tyr His Leu Glu Cys Thr Phe Thr Ser Ile Lys Gly Ala Trp Glu
 225 230 235 240
 Lys Ala Arg Phe Ser Val Phe Leu Glu Ser Asp Pro Ile Gly Ala Phe
 245 250 255
 Leu Gly Gly Met Gly Glu Ser Leu Ser Pro Ala Pro Ile Gly Glu Met
 260 265 270
 Leu Ser Gln Gly Glu Ser Tyr Thr Phe Asn Ser Gln Ser Phe Thr Arg
 275 280 285
 Val Gln Thr Ser Gln Asn Asn Tyr Val Asn Tyr Thr Ala Arg Tyr Leu
 290 295 300
 Gly Asp Asn Tyr Gln Ser Gly Ser Ile Phe Phe Arg Ala Lys
 305 310 315

<210> 8964
 <211> 447
 <212> PRT
 <213> B.fragilis

<400> 8964

Lys Asn Asn Arg Arg Ile Trp Gly Ile Gln Ser Phe Thr Gly Met Lys
 1 5 10 15
 Thr Glu Asp Ile Ala Ile Ser Ile Thr Gly Tyr Ser Tyr Ser Asn Ile
 20 25 30

Lys Glu Thr Ile Pro Asp Gly Val Asp Lys Glu Glu Ile Ala Ala Val
 35 40 45
 Tyr Glu Glu Ile Ile Asp Glu Tyr Leu Gln Lys Gly Ile Pro Arg Glu
 50 55 60
 Ile Pro Ala Leu Ile Asn Val Ser Gly Ile Pro Gly Ala Gly Lys Ser
 65 70 75 80
 Thr Phe Cys Lys Lys Leu Leu Ala Met Pro Glu Asn Ser Ser Ala Ile
 85 90 95
 Tyr Ile Gly Phe Asp Ala Ile Met Glu Asn Glu Arg Leu Pro Tyr Ile
 100 105 110
 Arg Glu Glu Val Asn His Ala Glu Glu Ala Phe Lys Arg Trp Glu Leu
 115 120 125
 Ser Ala Arg Ile Ala Gly Tyr Glu Leu Leu Lys Arg Ala Ile Glu Asn
 130 135 140
 Lys Tyr Leu Ile Ile Phe Asp His Ser Ser Ala Leu Pro Gln His Ile
 145 150 155 160
 Asp Leu Phe Asn Leu Leu Leu Ser Glu Gly Tyr Glu Val His Phe Asn
 165 170 175
 Phe Ile Phe Ile Pro Glu Glu Glu Ala Arg Arg Arg Ala Lys Asn Arg
 180 185 190
 Lys Arg Tyr Ile Pro Pro Tyr Tyr Ile Glu Glu Arg Ser Lys Thr Leu
 195 200 205
 Gln Tyr Leu Leu Pro Glu Tyr Lys Arg Ile Cys Thr Thr Phe Lys Gln
 210 215 220
 Ile Glu Pro Met Arg Thr Arg Leu Ile Ile Ala Arg His Gly Asn Thr
 225 230 235 240
 Phe Arg Pro Glu Glu Thr Pro Thr Arg Val Gly Ala Lys Thr Asp Leu
 245 250 255
 Pro Leu Val Glu Glu Phe Lys Gly Arg Ser Ile Gly Arg Tyr Leu Lys
 260 265 270
 Glu His Asp Met Ile Pro Asp Val Ile Tyr Ala Ala Pro Leu Leu Arg
 275 280 285
 Thr Met Gln Thr Ala Arg Leu Ala Val Gln Thr Ile Gly Leu Asp Ser
 290 295 300
 Asp Ile Ser Pro Leu Asn Ala Phe Val Glu Ile Asp Tyr Gly Val Asp
 305 310 315 320
 Glu Asn Lys Thr Glu Glu Glu Val Arg Leu Arg Leu Gly Asn Gly Asn
 325 330 335
 Ile Glu Lys Gly Lys Lys Ile Ile Glu Asp Trp Asp Lys Asn Ala Val
 340 345 350
 Val Pro Asp Gly Trp Lys Val Asp Pro Asp Gln Ile Ile His Thr Trp
 355 360 365
 Leu Asp Phe Ala Glu Lys Thr Val Ile Pro His Gln Thr Thr Leu Leu
 370 375 380
 Val Thr Ser Asn Gly Ile Ile Arg Phe Ala Pro Tyr Leu Thr Gly Asp
 385 390 395 400
 Phe Glu Lys Phe Ala Gln Glu His Lys Ile Lys Val Ala Pro Gly Gly
 405 410 415
 Leu Cys Ile Phe Asp Lys Asn Asp Gly Asp Ser Phe Trp Thr Cys Ser
 420 425 430
 Ala Trp Asn Val Lys Pro Tyr Glu Leu Tyr Ala Asp Ser His Tyr
 435 440 445

<210> 8965
 <211> 451
 <212> PRT
 <213> B.fragilis

<400> 8965

Lys Trp Leu Arg Glu Asp Phe Val Phe Leu Ile Lys Thr Met Val Ile
 1 5 10 15
 His Ser Gly Leu Ala Leu Pro Gly Met Ser Ser Leu Met Asn Tyr Met
 20 25 30
 Gln Ile Ala Thr Thr Glu Asn Thr Ile Tyr Thr Ser Pro Asp Ala Ser
 35 40 45
 Lys Ile Phe Cys Tyr Thr Pro Ser Ile Ile Val Thr Pro Thr Gly Arg
 50 55 60
 Leu Ile Val Ser Phe Asp Leu Gly Gly Glu Gly Val Lys Ser Ile Glu
 65 70 75 80
 Gly His Lys Ser Ser Arg Ala Gly Gly Ser Arg Phe Gly Gln Gly Lys
 85 90 95
 Ile Phe Ile Ser Asp Asp Asn Gly Gln Lys Trp Thr Phe Val Gln Asn
 100 105 110
 Phe Pro Phe Trp His Ala Arg Leu Phe Thr Ile Gly Asn Ser Ile Tyr
 115 120 125
 Leu Ile Gly His Ala Gly Asp Ile Cys Ile Met Lys Ser Glu Asp Asn
 130 135 140
 Gly Glu Ser Trp Ser Asp Thr Tyr Phe Leu Thr His Gly Glu Lys Trp
 145 150 155 160
 His Ser Ser Ala Cys Asn Val Leu Phe Ser Asn Gly Asn Val Tyr Leu
 165 170 175
 Ala Met Glu Gln Arg Cys Arg Leu Asn Glu Val Thr Gly Trp Asp Val
 180 185 190
 Ala Gly Leu Ser Pro Thr Leu Phe Arg Ala Cys Val Glu Asp Asn Leu
 195 200 205
 Cys Leu Ala Ser Ser Trp Ser Arg Ser Glu Lys Phe Ile Tyr Lys Glu
 210 215 220
 Val Phe Asp Gly Ala Lys Leu Asp Phe Phe Gly Ile Pro Phe Tyr Asp
 225 230 235 240
 Cys Glu Thr Asn Lys Pro Lys Glu Ile Ala Thr Gly Ile Asn Asn Ala
 245 250 255
 Pro Leu Gly Trp Leu Glu Ala Asn Val Val Lys Phe Val Asp Lys Asp
 260 265 270
 His Ile Trp His Thr Asp Leu Lys Glu Val Phe His Leu Phe Leu Arg
 275 280 285
 Ala His Thr Gly Gly Val Asn Tyr Ala His Leu Phe Lys Ile Glu Ile
 290 295 300
 Gln Asp Asp Gln Ser Met Ile Pro Ser Leu Glu His Thr Pro Ser Gly
 305 310 315 320
 Gln Lys Ile Ser Tyr Ile Pro Phe Pro Gly Gly His Leu Lys Phe Phe
 325 330 335
 Ile Ile Tyr Asp Glu Leu Thr Arg Phe Tyr Trp Leu Val Ser Asn Gln
 340 345 350
 Ala Thr Asp Ser Met Arg Arg Val Ser Ser Leu Ser Asn Ile Lys Arg
 355 360 365
 Tyr Gly Leu Pro Asn Asn Glu Arg His Arg Leu Gln Leu His Phe Ser
 370 375 380
 Arg Asn Cys Val Asp Trp Cys Phe Val Gly Met Val Ala Cys Ser Thr
 385 390 395 400
 Asn Glu Leu Tyr Ser Arg Asn Tyr Pro Ser Ala Val Ile Lys Gly Asp
 405 410 415
 Asp Leu His Leu Val Cys Arg Ser Ala Asp Glu His Ala Leu Asn Pro
 420 425 430
 Gln Tyr Asn Asn Met Ile Thr His His Ile Val Ser Asn Phe Arg Gln
 435 440 445
 Leu Ile Tyr
 450

[illegible]

Lys 1	Met	Lys	Arg	Ile 5	Tyr	Leu	Thr	Phe	Val 10	Phe	Ala	Gly	Ala	Val 15	Cys
Phe	Gln	Val	Ala 20	Ala	Gln	Asn	Ala	Asp 25	Glu	Asp	Arg	Ile 30	Leu	Ser	Ala
Asp	Ser 35	Leu	Ile	Thr	Met	Asp 40	Gly	Arg	Leu	Asp	Ser 45	Leu	Tyr	Arg	Ser
Leu	Pro 50	Glu	Val	Met	Val 55	Gly	Glu	Arg	Pro 60	Val	Val	Lys	Ala	Met	
Gln 65	Gly	Lys	Leu	Val 70	Tyr	Asp	Leu	Pro	Arg 75	Leu	Ile	Gln	Asn	Phe 80	Ala
Val	Asp	Asn	Ala 85	Tyr	Asp	Ala	Ile	Lys 90	Glu	Leu	Pro	Gly	Val 95	Ser	Glu
Met	Asn	Asp 100	Asn	Leu	Thr	Leu	Gly	Gly 105	Lys	Ser	Val	Thr	Val 110	Val	Leu
Asp	Gly 115	Lys	Val	Thr	Thr	Met	Thr	Gln 120	Glu	Gln	Leu	Asn	Thr 125	Leu	Leu
Lys	Ser 130	Ile	Pro	Ala	Gly	Arg 135	Ile	Glu	Lys	Ala	Glu	Val 140	Met	Tyr	Ser
Ala 145	Pro	Ala	Arg	Tyr	Gln	Val 150	Arg	Gly	Ala	Met 155	Ile	Asn	Ile	Cys	Leu
Lys	Gln	Gly	Asp 165	Ser	Gly	Lys	Ser	Thr	Leu	Gln	Gly	Glu	Phe 175	Phe	Ser
Asp	Tyr	Arg	Gln 180	Lys	His	Tyr	Glu	Tyr 185	Leu	Thr	Glu	Arg	Ala 190	Ser	Leu
Leu	Tyr 195	Ser	Gly	His	Lys	Phe	Ser	Ala 200	Asp	Phe	Leu	Tyr	Ser 205	Tyr	Ser
His	Gly 210	Arg	Asn	Tyr	Phe	Leu	Thr	Asp 215	Lys	Glu	Ala	Leu	His	Ala	Leu
Ser 225	Asp	Gly	Thr	Ile	His	Pro	Ile	Ser	Thr	Asn	Glu	Ser	Gln	Arg	Ser
Arg	Ser	Asn	Arg 245	His	Asn	Leu	Arg	Leu	Ala	Gly	Asp	Tyr	Val	Phe	Ala
Ala	Asn	His	Gln 260	Leu	Ser	Val	Thr	Tyr	Asn	Ala	Gln	Phe	Val	Asn	Gly
Phe	Asn 275	Leu	Ser	Thr	Val	Asp	Gly	Thr	Gln	Ile	Ser	Asn	Ala	Arg	Thr
Arg	Met 290	Thr	Asp	Gln	Leu	His	Asn	Ala	Arg	Leu	Asp	Tyr	His	Met	Pro
Phe 305	Gly	Trp	Lys	Ala	Gly	Val	Glu	Tyr	Thr	Tyr	Tyr	His	Ser	Pro	Ser
Ser	Gln	Leu	Leu 325	His	Ser	Arg	Met	Gly	Ser	Asp	Glu	Leu	Asp	Phe	Arg
Val	Lys	Asp	Ser 340	Gln	Arg	Ile	Asn	Arg	Trp	Lys	Leu	Phe	Leu	Ser	Gly
Glu	His 355	Asp	Leu	Gly	Asn	Gly	Trp	Gly	Met	Asn	Tyr	Gly	Ala	Val	Tyr
Thr	Thr 370	Ser	Leu	Asp	Asn	Ser	His	Gln	Tyr	Tyr	His	Asp	Pro	Glu	Thr
Asp 385	Glu	Ile	Ile	Ser	Gly	Asn	Ser	Asn	Met	Lys	Ser	Arg	Arg	Arg	Glu
Gln	Thr	Leu	Asn 405	Phe	Tyr	Ala	Gly	Phe	Asn	Lys	Ala	Phe	Gly	Asp	Lys
Leu	Ser	Leu	Asp	Ala	Ser	Leu	Ala	Ala	Glu	Gln	Phe	His	Thr	Thr	Val

420	425	430
Trp Asn Glu Trp Ser Leu Tyr	Pro Thr Phe Asn Ile Asn Tyr Ala Pro	
435	440	445
Ala Pro Gly Asn Val Trp Gln Leu Ser Leu Ser Ser Asp Lys Ser Tyr		
450	455	460
Pro Asp Tyr Trp Ala Thr Gln Asp Ala Val Ser Tyr Met Gly Gly Gly		
465	470	475
Tyr Ser Glu Ile His Gly Asn Pro Tyr Leu Lys Pro Glu Ile Asn Tyr		
485	490	495
Gln Leu Gln Leu Thr Tyr Val Leu Asn Ser Lys Tyr Met Phe Asn Ala		
500	505	510
Trp Tyr Ser His Thr Lys Asp Asn Ala Thr Gln Thr Leu Tyr Gln Ser		
515	520	525
Pro Glu Arg Leu Val Glu Ile Tyr Lys Tyr Phe Asn Phe Asp Phe Glu		
530	535	540
Gln Gln Ala Gly Val Gln Ala Val Val Pro Phe Ala Ile Gly Arg Trp		
545	550	555
Leu Lys Ser Arg Phe Thr Leu Thr Gly Val Tyr Asp Arg Gln Lys Asp		
565	570	575
Ser Asp Phe Trp Asp Ile Pro Phe Asp Arg Lys Ala Tyr Tyr Ala Met		
580	585	590
Leu Asn Met Asn His Thr Val Thr Leu Phe Ser His Pro Asp Ile Lys		
595	600	605
Leu Ile Val Ser Gly Met Ile Arg Ser Lys Ala Ile Gln Gly Ile Tyr		
610	615	620
Asp Leu Pro Ala Ser Gly Asn Leu Asp Ile Ala Leu Arg Tyr Gly Phe		
625	630	635
Ala Asn Gly Lys Ala Leu Leu Thr Leu Arg Cys Asn Asp Leu Phe Glu		
645	650	655
Thr Gly Gln Ile Ser Pro Arg Ile Cys Tyr Val Met Gln Asn Val Thr		
660	665	670
Asn His Tyr Ser Ala Phe Arg Glu Phe Gly Val Ser Phe Thr Tyr Lys		
675	680	685
Phe Gly Gly Tyr Lys Glu Lys Lys Arg Glu Gly Val Asp Thr Ser Arg		
690	695	700
Phe Lys		
705		

<210> 8967
 <211> 160
 <212> PRT
 <213> B.fragilis

<400> 8967
 Lys Lys Lys Arg Ser Met Ser Val Ile Phe Lys Thr Val Lys Arg Pro
 1 5 10 15
 Ser Asp Pro Arg Val Glu Asn Ser Pro Lys Arg Tyr Tyr Pro Gln Leu
 20 25 30
 Ile Thr Leu Gly Arg Ser Val Asp Leu Lys Phe Ile Ala Gln Lys Ile
 35 40 45
 Gln Asp Arg Ser Ser Leu Ser Val Gly Asp Ile Lys Ser Thr Ile Gln
 50 55 60
 Asn Phe Val Glu Lys Leu Lys Glu Gln Leu Leu Glu Gly Lys Ala Val
 65 70 75 80
 Asn Ile Glu Gly Leu Gly Val Phe Met Leu Ala Ala Lys Ser Lys Gly
 85 90 95
 Ser Glu Lys Gln Glu Asp Ile Thr Ala Lys Ser Val Asp Ser Val Arg
 100 105 110
 Ile Tyr Phe Gln Ala Asn Lys Glu Leu Lys Ile Thr Lys Thr Ala Thr

	115		120		125
Arg	Ala Gly Glu Lys Leu	Asp Leu Ile Ser Leu	Asp Asp Tyr Leu Lys		
	130		135		140
Gly Thr Ala Asp Gly Gly	Asn Gly Asp Ile Val	Asp Asp Pro Thr Ala			
145		150		155	160

<210> 8968

<211> 233

<212> PRT

<213> B.fragilis

<400> 8968

Trp Ser Ile Leu Lys Asn Ala Arg Thr Met Ser Leu Ser Asn Leu Leu	
1	5 10 15
Ile Ile Phe Ser Ser Ser Phe Met Ala Leu Phe Pro Val Val Asn Pro	
	20 25 30
Leu Gly Asn Gly Phe Val Val Asn Gly Phe Phe Thr Asp Leu Asp Pro	
	35 40 45
Lys Gln Arg Lys Thr Ala Ile Arg Lys Leu Ile Leu Asn Phe Ile Ile	
	50 55 60
Ile Gly Val Gly Thr Leu Val Ile Gly His Leu Phe Leu Leu Met Phe	
65	70 75 80
Gly Leu Ala Ile Pro Val Ile Gln Leu Gly Gly Ile Leu Ile Cys	
	85 90 95
Lys Thr Ala Met Glu Leu Leu Gly Asp Ser Asn Ser Pro Asp Gln Glu	
	100 105 110
Glu Ser Asn Arg Asn Met Asp Ser Leu Lys Trp Lys Asn Ile Glu Gln	
	115 120 125
Lys Ile Phe Tyr Pro Ile Thr Phe Pro Ile Ser Ile Gly Pro Gly Ser	
	130 135 140
Ile Ser Val Ile Phe Thr Leu Met Ala Ser Ala Ser Val Lys Gly Lys	
145	150 155 160
Leu Leu Gln Thr Gly Ile Asn Tyr Phe Val Ile Ala Leu Val Ile Val	
	165 170 175
Cys Met Ala Ala Ile Leu Tyr Ile Phe Leu Ser Gln Gly Gln Arg Ile	
	180 185 190
Ile Gln Lys Leu Gly Pro Val Gly Asn Gln Ile Ile Asn Lys Leu Val	
	195 200 205
Ala Phe Phe Thr Phe Cys Ile Gly Ile Gln Ile Ser Val Thr Gly Ile	
	210 215 220
Ser Gln Ile Phe His Leu Ser Ile Leu	
225	230

<210> 8969

<211> 536

<212> PRT

<213> B.fragilis

<400> 8969

Gln Gln Gln Arg Leu Thr Ile Ile Phe Ala Cys Met Lys Leu Pro Ile	
1	5 10 15
Lys His Ile Ala Ile Leu Val Ile Ala Ser Leu Met Ala Ile Phe Ala	
	20 25 30
Tyr Gln Ala Tyr Trp Leu Val Ser Met Tyr His Thr Met Lys Ser Asp	
	35 40 45
Met Glu His Ser Ile Ile Glu Ala Met Arg Thr Ser Asp Tyr Asn Glu	
	50 55 60
Met Met Leu Arg Ile Glu Arg Met Arg Arg Asp Asp Gln Asp His Gly	
65	70 75 80

Glu	Ile	Ser	Val	Ser	Ala	Gly	Tyr	Asn	Asp	Glu	Gly	Gly	Thr	Leu	Val
				85					90					95	
Arg	Ser	Ser	Thr	Met	Val	His	Lys	Glu	Lys	Ile	Pro	Gly	Ser	Thr	Gly
			100					105					110		
Ile	Gln	Gln	Asp	Ser	Ile	Leu	Lys	Thr	Glu	Arg	Lys	Leu	Asp	Thr	Leu
		115					120					125			
Ile	Val	Val	Arg	Asn	Asp	Gln	Lys	Glu	Ile	Lys	Val	Val	Pro	Gln	Asp
	130					135					140				
Ser	Thr	Ala	Gln	Glu	Val	Lys	Ala	Ala	Met	Leu	Gln	Thr	Lys	Gly	Gly
145					150					155					160
Leu	Asp	Ile	Leu	Leu	Lys	Asp	Gln	Asn	Thr	Met	Leu	Glu	Leu	Ala	Thr
			165						170					175	
Tyr	Phe	Gln	Arg	Gly	Leu	His	Ser	Gly	Leu	Asp	Val	Ile	Met	Asp	Pro
			180					185					190		
Asp	Phe	Gln	Ser	Tyr	Asp	Ser	Leu	Leu	Thr	Leu	Ser	Leu	Gln	Glu	Arg
		195					200					205			
Gly	Ile	Ser	Leu	Pro	Tyr	Arg	Ile	Glu	Tyr	Leu	His	Phe	Gly	Asn	Thr
	210					215					220				
Pro	Asp	Ser	Ser	Leu	Leu	Phe	Thr	Asp	Thr	Leu	Gly	Met	Gly	Gly	Thr
225				230						235					240
Ala	Asn	Tyr	Ile	Pro	Gly	Pro	Asp	Ala	His	Thr	Tyr	Asp	Tyr	Thr	Phe
			245						250					255	
Asp	Ile	His	Ser	His	Ser	Leu	Tyr	Arg	Leu	Arg	Met	Asp	Ser	Val	Ala
			260					265					270		
Gly	Val	Ile	Val	His	Gln	Met	Ala	Gly	Ile	Leu	Ile	Thr	Ser	Phe	Ile
		275					280					285			
Ile	Leu	Leu	Ile	Leu	Gly	Phe	Ser	Phe	Trp	Phe	Leu	Ile	Arg	Thr	Leu
	290				295					300					
Leu	Lys	Gln	Lys	Thr	Leu	Glu	Glu	Met	Lys	Ser	Asp	Phe	Thr	Asn	Asn
305				310					315						320
Ile	Thr	His	Glu	Leu	Lys	Thr	Pro	Ile	Ala	Val	Ala	Tyr	Ala	Ala	Asn
			325						330					335	
Asp	Ala	Leu	Leu	Asn	Phe	Gly	Gln	Ala	Asp	Glu	Lys	Ala	Lys	Arg	Asp
			340					345					350		
Lys	Tyr	Leu	Ser	Ile	Ser	Gln	Glu	Gln	Leu	Gln	Arg	Leu	Ser	Gly	Leu
		355				360						365			
Val	Glu	Gln	Ile	Leu	Thr	Met	Ser	Met	Glu	Gln	Arg	Lys	Thr	Phe	Arg
	370					375					380				
Leu	Arg	Pro	Glu	Glu	Ile	Thr	Leu	Ala	Thr	Leu	Leu	Glu	Ser	Leu	Thr
385				390					395						400
Glu	Gln	His	Lys	Leu	Lys	Ala	Gln	Asn	Pro	Ile	Asp	Ile	Asp	Tyr	Arg
			405						410					415	
Val	Glu	Pro	Ala	Asn	Leu	Thr	Val	Phe	Ala	Asp	Arg	Thr	His	Phe	Ser
			420					425					430		
Asn	Ile	Leu													

<210> 8970
 <211> 135
 <212> PRT
 <213> B.fragilis

<400> 8970

Tyr Pro Gly Arg Glu Arg Val His Val Trp Asp Phe Gly Arg Asn His
 1 5 10 15
 Val Tyr Pro Gly Asn Gly Leu Leu Gly Ile Ser Thr Glu Thr Thr Asn
 20 25 30
 Glu Tyr Val Glu Pro Leu Ile Gln Glu Val Tyr Lys Glu Ile Asp Lys
 35 40 45
 Leu Gln Asn Asp Lys Val Thr Pro Glu Glu Leu Ala Met Val Arg Asn
 50 55 60
 Tyr Met Leu Gly Glu Met Cys Arg Asn Tyr Glu Ser Pro Phe Ser Leu
 65 70 75 80
 Ala Asp Ala Trp Met Phe Ile Leu Thr Ser Gly Leu Asp Asp Asp Tyr
 85 90 95
 Phe Ala Arg Ser Leu Gln Ala Val Lys Glu Val Thr Pro Glu Glu Ile
 100 105 110
 Arg Glu Leu Ala Gly Arg Tyr Leu Cys Lys Glu Ser Leu Lys Glu Val
 115 120 125
 Ile Ala Gly Lys Lys Leu Thr
 130 135

<210> 8971
 <211> 107
 <212> PRT
 <213> B.fragilis

<400> 8971

Lys Leu Pro Gly Ser Ala Leu Cys Asn Phe Leu Lys Tyr Thr Ser Met
 1 5 10 15
 Phe Ser Ile Ile Ser Ile Met Phe Leu Gly Ile Gly Ile Gly Tyr Leu
 20 25 30
 Leu Arg Asn Leu Lys Phe Leu Glu Lys Val Glu Lys Ser Thr Ser Leu
 35 40 45
 Thr Ile Phe Leu Leu Leu Phe Val Leu Gly Leu Ser Ile Gly Ser Asn
 50 55 60
 Ser Leu Ile Val Asn Asn Leu Gly Lys Phe Gly Trp Gln Ala Ile Val
 65 70 75 80
 Leu Ala Thr Ser Ser Ile Leu Gly Ser Met Leu Ala Ser Phe Leu Val
 85 90 95
 Leu Arg Leu Phe Phe Lys Lys Gly Gly Lys Ser
 100 105

<210> 8972
 <211> 570
 <212> PRT
 <213> B.fragilis

<400> 8972

Leu Leu Ile Leu Gln Leu His Phe Lys Asn Leu Lys Thr Pro Asp Met
 1 5 10 15
 Lys Ser Asp Ile Glu Ile Ala Arg Ser Val Glu Leu Lys Lys Ile Lys
 20 25 30
 Gln Val Ala Glu Ser Ile Gly Ile Pro Arg Asp Glu Val Glu Asn Tyr
 35 40 45
 Gly Arg Tyr Ile Ala Lys Ile Pro Glu Tyr Leu Ile Asp Glu Glu Lys

50	55	60
Val Lys Lys Ser Asn Leu	Ile Leu Val Thr Ala	Ile Thr Ala Thr Lys
65	70	75
Ala Gly Ile Gly Lys Thr	Thr Val Ser Ile Gly	Leu Ala Leu Gly Leu
85	90	95
Asn Lys Ile Gly Lys Lys	Ala Ile Val Ala Leu	Arg Glu Pro Ser Leu
100	105	110
Gly Pro Cys Phe Gly Met	Lys Gly Ala Ala Gly	Gly Tyr Ala
115	120	125
Gln Val Leu Pro Met Glu	Lys Ile Asn Leu His	Phe Thr Gly Asp Phe
130	135	140
His Ala Ile Thr Ser Ala	His Asn Met Ile Ser	Ala Leu Leu Asp Asn
145	150	155
Tyr Leu Tyr Gln Asn Gln	Ser Lys Gly Phe Gly	Leu Lys Glu Ile Leu
165	170	175
Trp Arg Arg Val Leu Asp	Val Asn Asp Arg Ser	Leu Arg Asn Ile Val
180	185	190
Val Gly Leu Gly Pro Lys	Thr Asn Gly Ile Thr	Gln Glu Ser Gly Phe
195	200	205
Asp Ile Thr Pro Ala Ser	Glu Ile Met Ala Ile	Leu Cys Leu Ser Lys
210	215	220
Asp Val Asp Asp Leu Arg	Arg Arg Ile Glu Asn	Ile Leu Leu Gly Tyr
225	230	235
Thr Tyr Asp Asn Lys Pro	Phe Thr Val Lys Asp	Leu Gly Val Ala Gly
245	250	255
Ala Ile Thr Val Leu Leu	Lys Asp Ala Ile His	Pro Asn Leu Val Gln
260	265	270
Thr Thr Glu Gly Thr Ala	Ala Phe Val His Gly	Gly Pro Phe Ala Asn
275	280	285
Ile Ala His Gly Cys Asn	Ser Ile Leu Ala Thr	Lys Met Ala Met Thr
290	295	300
Phe Gly Asp Tyr Val Ile	Thr Glu Ala Gly Phe	Gly Ala Asp Leu Gly
305	310	315
Ala Glu Lys Phe Tyr Asn	Ile Lys Cys Arg Lys	Ser Gly Leu Gln Pro
325	330	335
Arg Leu Thr Val Ile Val	Ala Thr Ala Gln Gly	Leu Lys Met His Gly
340	345	350
Gly Val Ser Leu Asp Arg	Ile Lys Glu Pro Asn	Leu Glu Gly Leu Arg
355	360	365
Glu Gly Leu Arg Asn Leu	Asp Lys His Val Arg	Asn Leu His Ser Phe
370	375	380
Gly Gln Thr Val Ile Val	Ala Phe Asn Lys Phe	Ala Ser Asp Thr Asp
385	390	395
Glu Glu Met Glu Leu Leu	Arg Glu His Cys Glu	Gln Leu Gly Val Gly
405	410	415
Tyr Ala Ile Asn Asn Ala	Phe Ser Glu Gly Gly	Glu Gly Ala Val Asp
420	425	430
Leu Ala Asn Leu Val Val	Glu Thr Ile Glu Asn	Lys Pro Ser Glu Pro
435	440	445
Leu Gln Phe Thr Tyr Asn	Asp Glu Asp Ser Val	Gln Gln Lys Ile Glu
450	455	460
Lys Val Ala Thr Asn Leu	Tyr Gly Ala Ser Val	Val Thr Tyr Ser Thr
465	470	475
Leu Thr Arg Asn Lys Ile	Lys Leu Ile Glu Met	Gly Ile Gly His
485	490	495
Tyr Pro Val Cys Ile Ala	Lys Thr Gln Tyr Ser	Phe Ser Ala Asp Pro
500	505	510
Lys Val Tyr Gly Ala Val	Asp Asn Phe Glu Leu	His Ile Lys Asp Ile
515	520	525

Val Ile Asn Asn Gly Ala Glu Met Ile Val Ala Ile Ala Gly Glu Ile
 530 535 540
 Met Arg Met Pro Gly Leu Pro Lys Glu Pro Gln Ala Leu His Ile Asp
 545 550 555 560
 Ile Val Asp Gly Asn Ile Glu Gly Leu Ser
 565 570

<210> 8973

<211> 1095

<212> PRT

<213> B.fragilis

<400> 8973

Leu Lys Pro Ile Leu Phe Met Thr Lys Lys Ser Asn Leu Ser Leu Arg
 1 5 10 15
 Phe Thr Arg Val Trp Glu Lys His Cys Leu Lys Thr Ala Ala Ala Thr
 20 25 30
 Leu Leu Leu Cys Cys Ala Leu Pro Val Gln Ala Lys Ala Asp Thr Tyr
 35 40 45
 Lys Thr Gln Glu Thr Ala Ser Ile Gln Gln Gln Thr Val Lys Thr Thr
 50 55 60
 Gly Val Ile Ile Asp Asn Thr Gly Glu Pro Leu Ile Gly Val Ser Val
 65 70 75 80
 Lys Val Gln Gly Thr Asn Thr Gly Thr Ile Thr Asp Leu Asp Gly Lys
 85 90 95
 Phe Ser Ile Gly Thr Pro Pro Lys Ala Leu Leu Glu Phe Ser Phe Ile
 100 105 110
 Gly Tyr Lys Thr Ile Ile Met Glu Val Thr Gly Lys Glu Leu His Ile
 115 120 125
 Thr Met Gln Glu Asp Ser Lys Gln Leu Asp Glu Val Val Val Val Gly
 130 135 140
 Tyr Gly Ser Gln Lys Lys Val Asn Val Thr Gly Ser Val Ser Met Val
 145 150 155 160
 Asn Ala Asp Val Leu Glu Ser Arg Pro Val Gln Asn Val Ser Gln Ala
 165 170 175
 Leu Gln Gly Val Ile Pro Gly Leu Asn Met Ser Val Gly Ser Ser Gly
 180 185 190
 Gly Thr Leu Asp Gly Lys Leu Asn Val Asn Ile Arg Gly Ala Gly Thr
 195 200 205
 Ile Ser Asp Gly Ser Ser Ser Pro Leu Val Leu Ile Asp Gly Ile
 210 215 220
 Glu Gly Asp Met Asn Thr Val Asn Pro Asn Asp Ile Glu Ser Val Ser
 225 230 235 240
 Val Leu Lys Asp Ala Ala Ser Ser Ser Ile Tyr Gly Ala Arg Ala Ala
 245 250 255
 Phe Gly Val Ile Leu Ile Thr Thr Lys Ser Gly Lys Ser Gly Lys Thr
 260 265 270
 Arg Val Asn Tyr Ser Gly Asn Val Arg Phe Ser Asp Ala Ile Gln Leu
 275 280 285
 Pro Asp Met Val Asp Ser Tyr Thr Phe Ala Gln Tyr Phe Asn Arg Ala
 290 295 300
 Ser Thr Asn Gly Gly Glu Ser Pro Thr Phe Asp Glu Lys Ala Leu Gln
 305 310 315 320
 Asn Ile Leu Asp Phe Gln Asn Gly Lys Phe Thr Asp Pro Ser Thr Pro
 325 330 335
 Glu Tyr Tyr Gly Val Glu Ala Gly Pro Asp Gly Lys Trp Lys Ser Tyr
 340 345 350
 Ala Gly Ser Phe Ala Asn Thr Asp Trp Phe Lys Glu Phe Tyr Lys Ser
 355 360 365

Trp	Thr	Pro	Ser	Thr	Glu	His	Asn	Leu	Ser	Ile	Ser	Gly	Gly	Thr	Glu
370						375					380				
Lys	Leu	Thr	Tyr	Met	Ile	Ser	Gly	Ser	Phe	Leu	Asn	Gln	Asn	Gly	Leu
385					390					395					400
Ile	Arg	His	Gly	Glu	Asp	Asn	Phe	Asn	Arg	Tyr	Thr	Met	Asn	Ala	Lys
				405					410					415	
Ile	Ser	Ala	Lys	Pro	Ala	Glu	Trp	Val	Thr	Leu	Asn	Tyr	Thr	Ser	Lys
			420					425					430		
Trp	Thr	Arg	Glu	Asp	Tyr	Asp	Arg	Pro	Thr	Tyr	Met	Thr	Gly	Ala	Phe
		435					440					445			
Phe	His	Asn	Ile	Ala	Arg	Arg	Trp	Pro	Thr	Cys	Ala	Pro	Met	Asp	Pro
	450					455					460				
Asn	Gly	His	Tyr	Met	Pro	Asn	Met	Glu	Ile	Ile	Gln	Leu	Glu	Glu	Gly
465					470					475					480
Gly	Val	Gln	Thr	Ser	Gln	Arg	Asn	Trp	Tyr	Thr	Asn	Gln	Leu	Gln	Ala
				485					490					495	
Ile	Phe	Glu	Pro	Val	Lys	Asp	Trp	Arg	Ile	Val	Val	Glu	Gly	Ser	Met
			500					505					510		
Arg	Thr	Tyr	Thr	Arg	Lys	Gln	His	Trp	Ala	Val	Leu	Pro	Ile	Tyr	Gly
		515					520						525		
Tyr	Asp	Val	Asn	Asn	Lys	Pro	Tyr	Leu	Leu	Ser	Trp	Asn	Gly	Gly	Ala
	530					535									
Ala	Gly	Tyr	Ser	Glu	Val	Gln	Asp	Glu	Arg	Glu	Asp	Glu	Asp	Tyr	Phe
545					550					555					560
Ser	Gly	Asn	Ile	Tyr	Ser	Asp	Tyr	Ala	Lys	Thr	Ile	Gly	Asn	His	Tyr
				565					570					575	
Phe	Lys	Val	Met	Gly	Gly	Phe	Asn	Ala	Glu	Leu	Phe	Arg	Pro	Ser	Gly
			580					585					590		
Met	Thr	Gly	Phe	Gly	Thr	Asp	Leu	Ile	Ser	Ser	Asn	Val	Pro	Ser	Leu
		595					600					605			
Gly	Leu	Thr	Gln	Asp	Asn	Gln	Lys	Ala	Ser	Ala	Trp	Ala	Arg	Glu	Arg
	610					615						620			
Ala	Ile	Ala	Gly	Phe	Phe	Gly	Arg	Val	Asn	Tyr	Asn	Tyr	Lys	Glu	Arg
625					630					635					640
Tyr	Met	Leu	Glu	Ala	Asn	Leu	Arg	Tyr	Asp	Gly	Ser	Ser	Arg	Phe	Val
				645					650					655	
Gly	Asp	Lys	Arg	Trp	Gly	Leu	Phe	Pro	Ser	Phe	Ser	Ala	Gly	Trp	Asn
		660						665					670		
Ile	Ala	Arg	Glu	Asp	Phe	Phe	Arg	Pro	Leu	Thr	Gly	Val	Ile	Gly	Thr
		675					680					685			
Leu	Lys	Leu	Arg	Gly	Ser	Trp	Gly	Gln	Leu	Gly	Asn	Asn	Asn	Thr	Asp
	690					695					700				
Lys	Ala	Asn	Ala	Trp	Tyr	Pro	Phe	Tyr	Gln	Asn	Met	Ile	Thr	Gly	Ser
705					710					715					720
Ala	Asn	Ser	Gly	Trp	Leu	Ile	Asp	Ser	Lys	Lys	Gln	Asn	Thr	Ala	Gln
			725						730					735	
Leu	Pro	Gly	Ile	Val	Asn	Ser	Leu	Met	Thr	Trp	Glu	Thr	Ile	Glu	Ser
			740					745					750		
Trp	Asp	Ile	Gly	Leu	Asp	Phe	Gly	Leu	Leu	Asp	Asn	Arg	Leu	Thr	Gly
	755						760					765			
Ser	Val	Gly	Tyr	Tyr	Asn	Arg	Tyr	Thr	Tyr	Asp	Met	Ile	Gly	Pro	Ala
	770					775					780				
Pro	Ile	Leu	Pro	Pro	Val	Leu	Gly	Ala	Leu	Pro	Pro	Gln	Val	Asn	Asn
					790					795					800
Cys	Asp	Met	Lys	Ser	Tyr	Gly	Trp	Glu	Leu	Glu	Leu	Ser	Trp	Arg	Asp
				805					810					815	
Arg	Ile	Ser	Glu	Phe	Asp	Tyr	Ser	Ala	Arg	Phe	Val	Leu	Ser	Asp	Gly
			820					825				830			
Lys	Arg	Lys	Ile	Leu	Arg	Tyr	Pro	Asn	Pro	Thr	Asn	Ser	Leu	Ser	Ser

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835 840 845
 Asp Val Tyr Tyr Asn Gly Gln Ile Leu Gly Asp Ile Trp Gly Tyr Lys
 850 855 860
 Thr Val Gly Ile Ala Gln Thr Gln Glu Glu Met Asn Ala His Leu Ala
 865 870 875 880
 Asn Gly Gly Thr Pro Asn Trp Gly Thr Asn Trp Gly Ala Gly Asp Val
 885 890 895
 Met Tyr Ala Asn Leu Asp Gly Lys Glu Gly Val Asn Asn Gly Ser Asn
 900 905 910
 Thr Leu Glu Asp His Gly Asp Leu Thr Ile Ile Gly Asn Asn Thr Pro
 915 920 925
 Arg Tyr Asn Phe Gly Leu Thr Leu Thr Gly Ala Trp Lys Gly Phe Asp
 930 935 940
 Phe Ser Val Phe Leu Gln Gly Val Met Lys Arg Asp Tyr Trp Leu Asp
 945 950 955 960
 Gly Pro Tyr Phe Trp Gly Ala Asn Gly Gly Leu Trp Gln Ser Thr Ala
 965 970 975
 Phe Lys Glu His Met Asp Tyr Trp Arg Pro Glu Gly Asp Pro Leu Gly
 980 985 990
 Ala Asn Thr Asn Ala Tyr Tyr Pro Lys Pro Tyr Phe Asn Thr Asp Lys
 995 1000 1005
 Asn Gln Lys Val Gln Ser Gly Tyr Leu Gln Asn Ala Ala Tyr Cys Arg
 1010 1015 1020
 Leu Lys Asn Ala Gln Ile Gly Tyr Thr Leu Pro Lys Ile Trp Thr Arg
 1025 1030 1035 1040
 Lys Ala Ala Met Glu Ser Val Arg Val Tyr Val Ser Gly Asp Asn Leu
 1045 1050 1055
 Val Thr Phe Ser Gly Ile Ser Gly Val Phe Asp Pro Glu Leu Leu Gly
 1060 1065 1070
 Ser Asp Trp Gly Asp Gly Lys Leu Tyr Pro Leu Gln Arg Thr Ile Ser
 1075 1080 1085
 Ile Gly Leu Asn Val Asn Phe
 1090 1095

<210> 8974
 <211> 74
 <212> PRT
 <213> B.fragilis

<400> 8974
 Leu Leu Thr Ile Ile Met Val Ser Phe Arg Val Ser Pro Leu Asp Glu
 1 5 10 15
 Leu Val Ala Leu Gly Ser Glu Asn Pro Ile Thr Arg Ala Pro Ser Arg
 20 25 30
 Leu Ala Ala Val Ser Lys Leu Ser Arg Val Arg Val Glu Gly Ser Lys
 35 40 45
 Asn Arg Val Ala Thr Thr Leu Pro Ser Asn Asn Arg Arg Leu Gly Phe
 50 55 60
 Phe Ser Asn Cys Phe Ala Ile Ser Ser Ile
 65 70

<210> 8975
 <211> 407
 <212> PRT
 <213> B.fragilis

<400> 8975
 Lys Val Asn Ile Lys Ile Cys Gln Lys Lys Val Ala Leu Val Tyr Lys
 1 5 10 15

Leu Tyr Ile Cys Gln Met Lys Thr Thr Arg Tyr Ile Tyr Thr Ala Leu
 20 25 30
 Ile Leu Ala Ala Leu Ser Gln Gly Asn Ala Val Ala Gln Asn Lys Gly
 35 40 45
 Gly Phe Phe Ser Lys Val Arg Asp Thr Phe Ser Thr Glu Ile Lys Ile
 50 55 60
 Gly Asn Tyr Thr Phe Lys Asp Gly Ser Val Tyr Thr Gly Glu Met Lys
 65 70 75 80
 Gly Arg Lys Pro Asn Gly Lys Gly Lys Thr Ile Phe Lys Asn Gly Asp
 85 90 95
 Val Tyr Glu Gly Glu Tyr Val Lys Gly Lys Arg Glu Gly Phe Gly Val
 100 105 110
 Tyr Thr Phe Pro Asp Gly Glu Arg Tyr Glu Gly Gln Trp Tyr Gln Asp
 115 120 125
 Gln Gln His Gly Asn Gly Ile Tyr Tyr Phe Met Asn Asn Asn Arg Tyr
 130 135 140
 Asp Gly Met Trp Phe Gln Asp Tyr Gln His Gly Pro Gly Thr Met Tyr
 145 150 155 160
 Tyr His Asn Gly Asp Ile Tyr Val Gly Asp Trp Val Asn Asp Lys Arg
 165 170 175
 Glu Gly Lys Gly Thr Tyr Thr Trp Arg Asp Gly Ser Lys Tyr Val Gly
 180 185 190
 Asp Trp Lys Asn Asp Lys Lys Asp Gly Lys Gly Val Leu Val Trp Asn
 195 200 205
 Asp Gly Cys Lys Tyr Asp Gly Asp Trp Lys Asn Asp Val Arg Glu Gly
 210 215 220
 Lys Gly Thr Phe Glu Tyr Thr Asn Gly Glu Lys Tyr Val Gly Asp Trp
 225 230 235 240
 Lys Asp Asp Leu Gln His Gly Lys Gly Ile Phe Phe Leu Gly Gly Asp
 245 250 255
 Arg Tyr Glu Gly Ser Tyr Leu Gln Gly Glu Arg Thr Gly Pro Gly Ile
 260 265 270
 Tyr Tyr His Ala Asn Gly Asp Lys Tyr Val Gly Asn Phe Lys Asp Gly
 275 280 285
 Met Gln Asp Gly Glu Gly Thr Phe Thr Trp Ala Asn Gly Ala Val Tyr
 290 295 300
 Glu Gly Glu Trp Lys Asp Asn Lys Arg Asn Gly His Gly Ile Tyr Lys
 305 310 315 320
 Trp Ser Asn Gly Asp Val Tyr Glu Gly Glu Trp Lys Asn Asn Gln Pro
 325 330 335
 Asn Gly Lys Gly Thr Leu Thr Leu Thr Asn Gly Thr Lys Tyr Lys Gly
 340 345 350
 Gly Phe Val Asn Gly Met Gln Glu Gly Asn Gly Val Glu Glu Asp Lys
 355 360 365
 Asn Gly Asn Arg Tyr Glu Gly Phe Phe Lys Gln Gly Lys Lys Asn Gly
 370 375 380
 Pro Phe Val Glu Thr Asp Lys Asn Gly Lys Val Ile Arg Lys Gly Thr
 385 390 395 400
 Tyr Lys Phe Gly Arg Leu Glu
 405

<210> 8976

<211> 112

<212> PRT

<213> B.fragilis

<400> 8976

Leu Arg Ile Met Glu Asn Gln Glu Thr Lys Ile Ser Asn Val Thr Thr
 1 5 10 15

Ser Met Lys Val Glu Lys Glu Ile Asn Gly Phe Lys Val Ser Gly Thr
 20 25 30
 Val Glu Val Tyr Asn Asp Ser Lys Arg Ile Lys Arg Ile Asp Ala Ser
 35 40 45
 Val Gln Lys Thr Asp Ser Lys Ala Met Ala Pro Phe Lys Tyr Ser Phe
 50 55 60
 Thr Val Thr Arg Gly Leu Asn Asp Met Val Asn Pro Ser Glu Glu Asn
 65 70 75 80
 Glu Pro Glu Arg Asp Gln Ala Leu Thr Ala Gly Ile Glu Phe Glu Lys
 85 90 95
 Ala Val Glu Gln Ala Val Ser Gly Met Ile Phe Asn Thr Ile Val Glu
 100 105 110

<210> 8977

<211> 154

<212> PRT

<213> B.fragilis

<400> 8977

Asp Thr Gln Met Lys Tyr Leu Arg Tyr Thr Cys His Gly Asn Leu Tyr
 1 5 10 15
 Ala Asp Ala Glu Cys Lys Lys Gly Asn Glu Leu Val Asn Asp Leu Ile
 20 25 30
 Pro Tyr Arg Pro Glu Phe Leu Asn Ser Leu Pro Leu Gly Lys Lys
 35 40 45
 Asp Ile Lys Tyr Gly Cys His Thr Asn Tyr Asn Lys Cys Asp His Lys
 50 55 60
 Ile Ile Asp Ser Gly Leu Gln Gln Phe Thr Phe Asp Ala Gly Arg Ser
 65 70 75 80
 His Gln Ser Lys Tyr Asn Gly Tyr Thr Ala Arg Thr Asp Ala Asp Gly
 85 90 95
 Lys Arg Asp Gly Ile Lys Tyr Leu Leu Phe Tyr Ile Leu Pro Phe Glu
 100 105 110
 Ala Ile His Val Pro Val Arg Phe Phe Leu Ile Arg Arg Val Arg Ile
 115 120 125
 Ala Glu Gln Leu His Gly Arg Phe Thr Asp Lys Tyr Pro Thr Ala Gln
 130 135 140
 Leu Asn Asp Arg Asp Gly Gln Thr Glu His
 145 150

<210> 8978

<211> 390

<212> PRT

<213> B.fragilis

<400> 8978

Lys Thr Lys Met Ile Ile Arg Ile Val Gln Asn Ile Gln Arg Ile Asn
 1 5 10 15
 Lys Glu Gly Asn Ala Pro Leu Tyr Ile Ser Phe Tyr Leu Gly Lys Glu
 20 25 30
 Lys Val Val Ile Pro Cys Lys Leu Ser Val Pro Thr Thr Lys Phe Asp
 35 40 45
 Ser Lys Thr Gly Met Leu Arg Gly Thr Asn Lys Glu Ala Lys Asp Ile
 50 55 60
 Asn Leu Ile Ile Glu Arg Leu Lys Ala Lys Val Asn Asp Ile Leu Val
 65 70 75 80
 Lys Tyr Arg Leu Lys Asn Leu Thr Leu Asn Lys Glu Ala Phe Met Arg
 85 90 95
 Glu Tyr Asn Asn Pro Ser Asp Phe Lys Ser Phe His Asp Phe Val Ala

100	105	110
Ser Tyr Met Lys Thr Tyr Ser Arg Arg Leu Glu Ile Gly Thr Phe Arg		
115	120	125
His His Lys Ser Cys Met Arg Lys Phe Lys Glu Tyr Cys Glu Gly Leu		
130	135	140
Gln Phe His Glu Leu Thr Glu Asp Phe Leu Arg Asp Tyr Leu Ile Tyr		
145	150	155
Met Lys Lys Thr Leu Cys Asn Ala Asp Ser Thr Ala Gln Arg Asn Leu		
165	170	175
Ser Thr Ile Lys Ile Tyr Val Ser Ala Ala Ile Lys Lys Gly Tyr Met		
180	185	190
Glu Asn Asp Pro Phe Lys Asp Phe Gly Val Lys Arg Ile Lys Ser Asn		
195	200	205
Ile Asp Tyr Leu Thr Glu Glu Glu Leu Ile Lys Phe Ile Ser Leu Tyr		
210	215	220
Tyr Asp Arg Arg Leu Pro Glu Arg Leu Glu Arg Thr Leu Gly Phe Phe		
225	230	235
Leu Phe Met Cys Phe Thr Ser Leu His Ile Ser Asp Ala Arg His Val		
245	250	255
Cys Leu Glu Gln Ile Asn Asn Gly Ile Leu Thr Tyr Tyr Arg Ile Lys		
260	265	270
Asn Arg Asn Cys Lys Pro Glu Ala Ile Lys Ile Pro Leu Ser Ile Pro		
275	280	285
Ala Phe Lys Ile Ile Glu Glu Leu Gln Gly Lys Arg Lys Glu Gly His		
290	295	300
Leu Phe Thr Ser Leu Gln Cys Asp Gln Val Val Asn Arg Gln Ile Lys		
305	310	315
Glu Ile Ala Ser Ile Leu Glu Ile Lys Lys Lys Val Ser Ala Lys Thr		
325	330	335
Gly Arg His Thr Phe Ala Thr Ile Phe Leu Lys Lys Thr Lys Asp Val		
340	345	350
Ala Thr Leu Gln Lys Leu Leu Gly His Ser Asn Leu Lys Glu Thr Met		
355	360	365
Ile Tyr Ala His Val Leu Asp Glu Ser Lys Gln Glu Gly Met Gln Cys		
370	375	380
Phe Asn Cys Phe Ala Ile		
385	390	

<210> 8979

<211> 266

<212> PRT

<213> B.fragilis

<400> 8979

Ile His Arg Met Met Asn Asn Arg Ile Tyr Cys Thr Phe Ile Leu Ser		
1	5	10
Ile Ile Ala Val Met Val Cys Ala Gln Thr Glu Gln Pro Lys Asp Ser		
20	25	30
Ile Lys Arg Gln Arg Glu Thr Val Pro Glu Ile Arg Gln Glu Leu His		
35	40	45
Ile Asn Asp Arg Asn Ile Gln Thr Asp Gly Thr Leu Pro Asp Asn Thr		
50	55	60
Arg Gln Ala Ala Ala Gly Asp Ser Met Thr Phe Arg Ile Pro Tyr Pro		
65	70	75
Glu Ser Ile Pro Ser Gly Trp Ile Val Pro Gln Leu Gly Thr Tyr Ser		
85	90	95
Thr Pro Phe Ile Trp Asp Tyr Asp Arg Tyr Tyr Asn Phe Asn Leu Ser		
100	105	110
Pro Asn Ser Asn Leu Ser Thr Phe Ser Asn Tyr Asn Thr Tyr Leu Ser		

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      115              120              125
Ile Gly Thr Ile Val Lys Ala Gly Ala Ala Tyr Ser Phe Ser Pro Asn
      130              135              140
Asp Arg Trp Ile Phe Ser Gly Gly Val Phe Val Ala Lys Tyr Thr Leu
145              150              155              160
Pro Ser Leu Arg Ile Pro Thr Ala Pro Met Ala Gly Ser Arg Phe Asp
      165              170              175
Ala Gly Ile His Gly Lys Ile Thr Tyr Arg Leu Thr Asp His Leu Tyr
      180              185              190
Leu Asn Val Phe Gly Gln Tyr Ser Leu Asn Gly Gln Arg Asn Ser Lys
      195              200              205
Lys Gly Tyr Met Val Pro Asp Leu Tyr Met Gln Asn His Phe Gly Gly
      210              215              220
Thr Val Asp Tyr Met Phe Asn Gly Lys Phe Gly Ile Thr Gly Gly Ala
225              230              235              240
Ile His Glu Phe Asn Pro Val Lys Gly Arg Trp Glu Thr Asn Pro Val
      245              250              255
Phe Gly Pro Val Ile His Leu Lys Lys Lys
      260              265

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<210> 8980
<211> 585
<212> PRT
<213> B.fragilis

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<400> 8980

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Tyr Ser Met Ile Met Lys Thr Thr Lys Leu Gln Leu Ser Leu Leu Ala
1      5      10      15
Leu Phe Leu Gly Cys Ala Ser Leu Gln Ala Gln Tyr Lys Trp Ala Asp
      20      25      30
Pro Leu Lys Gln Asp Phe His Thr Val Arg Gly Gln Ala Trp Gln Asp
      35      40      45
Glu Leu Lys Asp Ser Tyr Ala Arg Leu Pro Gln Arg Ala Glu Asp Lys
      50      55      60
Val Arg Lys Pro Leu Trp Asp Leu Ser Arg Gln Ser Ala Gly Leu Ser
65      70      75      80
Val Ala Phe Arg Ser Asn Ala Ser Glu Ile Lys Val Arg Tyr Val Val
      85      90      95
Lys Gly Gly Leu Ser Met Pro His Met Pro Ala Thr Gly Val Ser Gly
      100     105     110
Ile Asp Leu Tyr Ala Thr Asp Asn Asn Gly Gln Glu Arg Trp Cys Ala
      115     120     125
Gly Asn Tyr Ser Met Gly Asp Thr Ile Val Tyr Asn Phe Arg Gly Leu
      130     135     140
Ser Tyr Ala Ala Lys Ser Gly Asn Gly Phe Glu Tyr Gln Leu Phe Leu
145     150     155     160
Pro Leu Tyr Asn Ser Val Ser Trp Met Glu Ile Gly Val Pro Ala Asp
      165     170     175
Ala Ser Phe Arg Phe Leu Pro Val Ser Gln Glu Lys Pro Leu Val Ile
      180     185     190
Tyr Gly Thr Ser Ile Ala Gln Gly Ala Cys Ala Ser Arg Pro Gly Met
      195     200     205
Ala Trp Gly Asn Ile Leu Asn Arg Lys Leu Gly His Pro Val Ile Asn
      210     215     220
Leu Gly Phe Ser Gly Asn Gly Lys Leu Glu Glu Ala Leu Phe Asp Leu
225     230     235     240
Leu Ser Glu Ile Asp Ala Arg Leu Tyr Ile Ile Asp Cys Met Pro Asn
      245     250     255
Leu Ala Gly Lys Glu Ala Ser Ala Val Val Tyr Gln Arg Thr Leu Glu

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115 120 125 130 135 140 145 150 155 160 165 170 175 180 185 190 195 200 205 210 215 220 225 230 235 240 245 250 255 260 265

260 265 270
 Gly Val Lys Lys Leu Arg Glu Lys Ser Arg Ala Pro Ile Leu Leu Val
 275 280 285
 Glu His Asp Gly Tyr Ser Asn Glu Phe Ser Ser Glu Ser Ala Glu Glu
 290 295 300
 Ser Tyr Arg Val Ala Asn Ala Glu Leu Arg Lys Ala Tyr Glu Thr Leu
 305 310 315 320
 Gln Lys Glu Gln Val Pro Thr Val Tyr Tyr Leu Thr Lys Glu Glu Ile
 325 330 335
 Gly Met Pro Met Asp Ala Met Val Asp Gly Val His Ser Thr Asp Leu
 340 345 350
 Gly Met Gln Gln Tyr Ala Asp Ser Tyr Arg Lys Lys Ile Gly Glu Ile
 355 360 365
 Leu His Glu Glu Ser Glu Gly Pro Thr Ser Cys Ile Pro Cys Lys Gln
 370 375 380
 Gln Arg Asp Pro Tyr Asp Trp Tyr Gly Arg His Glu Glu Ile Leu Lys
 385 390 395 400
 Leu Asn Lys Gln Ser Ala Pro Glu Val Val Met Ile Gly Asn Ser Ile
 405 410 415
 Thr His Phe Trp Gly Gly Glu Pro Ile Ala His Asn Gln Phe Gly Thr
 420 425 430
 Glu Ser Trp Asp Lys Leu Phe Lys Gly Lys Arg Val Arg Asn Leu Gly
 435 440 445
 Phe Gly Trp Asp Lys Thr Glu Asn Val Leu Trp Arg Ile Tyr His Gly
 450 455 460
 Glu Leu Asp Gly Phe Gln Ala Gln Asn Ile Phe Leu Leu Ile Gly Thr
 465 470 475 480
 Asn Asn Leu Leu Phe Asn Thr Asp Asp Glu Val Ile Glu Gly Ile Cys
 485 490 495
 Arg Val Val Lys Ala Ile Arg Glu Arg Gln Pro Arg Thr Lys Leu Cys
 500 505 510
 Val Met Gly Ile Leu Pro Arg Lys Glu Met Glu Thr Arg Ile Ala Gln
 515 520 525
 Ile Asp Ala Ala Leu Gln Glu Arg Leu Asn Asp Lys Asp Cys Thr Phe
 530 535 540
 Ile Asn Leu Ala Pro Gln Leu Thr His Lys Asp Gly Thr Ile Asp His
 545 550 555 560
 Ser Leu Phe Arg Asp Gly Leu His Pro Asn Ala Glu Gly Tyr Lys Arg
 565 570 575
 Ile Ala Lys Val Leu Lys Gly Tyr Leu
 580 585

<210> 8981
 <211> 79
 <212> PRT
 <213> B.fragilis

<400> 8981
 Arg Phe Tyr Leu Phe Ser Leu Ser Phe Tyr Leu Gly Gly Tyr Thr Thr
 1 5 10 15
 Phe Phe Ser Asp Asn Lys Tyr Thr Phe Gln Thr Ala Thr Ile Cys Asp
 20 25 30
 Phe Lys Asn Val Phe Ile Asn Lys Lys Cys Leu Leu Lys Gln Ser Leu
 35 40 45
 Lys Lys Lys Ala Leu Ile Met Gln Arg Thr Val Ile Lys Gly Ile Val
 50 55 60
 Arg Phe Asp Arg Arg Asn Lys Ser Tyr Arg Leu Leu Val Tyr Arg
 65 70 75

<400> 8982

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<210> 8983
<211> 288
<212> PRT
<213> B.fragilis
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<400> 8983

[illegible]

Asn	Arg	Lys	Ser	Met	Ser	Gly	Val	Asp	Ser	Pro	Glu	Asp	Ile	Glu	Arg
			260					265					270		
Ala	Glu	Lys	Ile	Ile	Ala	Glu	Phe	Gly	Glu	Phe	Asn	Leu	Ser	Pro	Glu
		275					280					285			

<210> 8984

<211> 704

<212> PRT

<213> B.fragilis

<400> 8984

Met	Leu	Thr	Ser	Asn	Phe	Thr	Arg	Gln	Ile	Met	Lys	Ile	Lys	Leu	Lys
1				5					10					15	
His	Ile	Tyr	Phe	Cys	Ser	Leu	Ile	Gly	Met	Gly	Gly	Leu	Ala	Leu	Thr
			20					25					30		
Ser	Cys	Asn	Asp	Phe	Leu	Asp	Arg	Ser	Pro	Ile	Ser	Asp	Ile	Thr	Pro
		35					40					45			
Glu	Asp	Tyr	Phe	Asn	Thr	Val	Asp	Gln	Val	Gly	Ser	Tyr	Val	Ile	Asn
	50					55					60				
Tyr	Tyr	Asp	Asp	Tyr	Leu	Glu	Asn	Ser	Asn	Thr	Thr	Lys	Met	Tyr	His
65					70					75					80
Gln	Arg	Ala	Trp	Asn	Ser	Gly	Val	Val	Arg	Asn	Asp	Ala	Asn	Thr	Asp
				85					90					95	
Asn	Leu	Leu	Ser	Asp	Asp	Gly	Asn	Leu	Asp	Tyr	Phe	Ala	Gly	Asn	Lys
			100					105					110		
Gln	Val	Pro	Glu	Gly	Lys	Asn	Ile	Gln	Glu	Pro	Leu	Asn	Arg	Ile	Arg
		115					120					125			
Val	Trp	Asn	Tyr	Leu	Phe	Glu	Lys	Val	Leu	Pro	Lys	Glu	Lys	Glu	Gly
	130					135					140				
Thr	Ile	Pro	Gly	Asp	Ala	Glu	Leu	Leu	Lys	Gln	Tyr	Ile	Gly	Glu	Ala
145					150					155					160
Tyr	Phe	Phe	Arg	Ala	Leu	Ala	Tyr	Tyr	Asn	Ala	Leu	Val	Arg	Phe	Gly
				165					170					175	
Asp	Tyr	Pro	Ile	Ile	Thr	Glu	Val	Leu	Pro	Asp	Asp	Ser	Glu	Thr	Leu
			180					185					190		
Ile	Lys	Lys	Ser	Gln	Arg	Ala	Pro	Arg	Asn	Glu	Val	Ala	Arg	Phe	Ile
		195					200					205			
Leu	Lys	Asp	Leu	Asp	Glu	Ala	Val	Ser	Arg	Leu	Lys	Glu	Arg	Gly	Phe
	210					215					220				
Gln	Asn	Asn	Gln	Arg	Ile	Asn	Lys	Gln	Ala	Ala	Leu	Val	Leu	Lys	Ser
225					230					235					240
Arg	Val	Ala	Leu	Phe	Glu	Ala	Thr	Phe	Glu	Lys	Tyr	His	Gln	Gly	Thr
				245					250					255	
Gly	Arg	Val	Pro	Gly	Asp	Pro	Thr	Trp	Pro	Gly	Ala	Ala	Met	Ser	Tyr
			260					265					270		
Asn	Ser	Gly	Lys	Thr	Phe	Asp	Ile	Ala	Gly	Glu	Ile	Asn	Phe	Phe	Leu
		275					280					285			
Thr	Glu	Ala	Met	Gln	Ala	Ala	Val	Ala	Val	Ala	Asp	His	Val	Gln	Leu
	290					295					300				
Ala	Glu	Asn	Ser	His	Val	Met	Asn	Pro	Pro	Tyr	Asn	Thr	Leu	Tyr	Gly
305					310					315					320
Trp	Asn	Pro	Tyr	Phe	Glu	Met	Phe	Ser	Gln	Pro	Asp	Leu	Ser	Asn	Val
				325					330					335	
Glu	Glu	Val	Leu	Leu	Trp	Lys	Gln	Tyr	Asn	Leu	Ser	Leu	Thr	Val	Ser
			340					345					350		
His	Cys	Val	Gly	Ala	Arg	Leu	Lys	Asn	Gly	Asp	Arg	Thr	Gly	Leu	Thr
		355					360					365			
Arg	Ser	Leu	Ile	Lys	Thr	Phe	Leu	Met	Lys	Asp	Gly	Leu	Pro	Ile	Tyr
		370					375					380			

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Ala Ser Asn Ser Thr Ile Asp Asp Arg Thr Val Ser Asp Glu Lys Lys
 385 390 395 400
 Asp Arg Asp Glu Arg Leu Gln Leu Phe Val Trp Gly Glu Lys Asp Ala
 405 410 415
 Trp Met Thr Asp Glu Arg Ala Asp Thr Val Lys Asn Tyr Asn Lys Asp
 420 425 430
 Gln Ala Gly Asn Ser Val Thr Asn Pro Val Pro Val Pro Trp Val Lys
 435 440 445
 Ser Thr Val Ile Ser Asp Gln Glu Gln Thr Arg Asp Ile Thr Gly Tyr
 450 455 460
 Arg Ser Arg Lys Phe Tyr Pro Tyr Asp Asp Glu Gln Ser Lys Ser Asp
 465 470 475 480
 Glu Leu Leu Gly Thr Asn Ala Cys Pro Ile Phe Arg Ala Ser Glu Ala
 485 490 495
 Tyr Leu Asn Tyr Ile Glu Ala Cys Tyr Glu Lys Asn Gly Thr Leu Asp
 500 505 510
 Ser Lys Ala Gln Glu Tyr Trp Lys Ala Ile Arg Arg Arg Ala Gly Val
 515 520 525
 Asp Glu Asp Tyr Gln Lys Thr Ile Ala Arg Thr Asp Leu Gly Arg Glu
 530 535 540
 Asp Asp Leu Gly Val Tyr Ser Gly Asp Arg Met Val Asp Ala Thr Leu
 545 550 555 560
 Tyr Asn Ile Arg Arg Glu Arg Arg Cys Glu Phe Ile Ala Glu Gly Met
 565 570 575
 Arg Trp Asp Asp Leu Lys Arg Trp Arg Ser Trp Asp Arg Leu Phe Thr
 580 585 590
 Glu Pro Tyr Ile Val Glu Gly Ile Asn Phe Trp Asp Glu Ala Tyr Lys
 595 600 605
 Leu Tyr Thr Thr Val Asp Lys Asp Gly Asn Glu Lys Ser Ala Val Val
 610 615 620
 Ala Asp Gly Ser Thr Ser Ala Asn Met Ser Pro Lys Ser Asp Gly Lys
 625 630 635 640
 Tyr Val Arg Pro Leu Arg Arg Thr Gln Thr Asn Asn Gln Leu Tyr Asp
 645 650 655
 Gly Tyr Thr Trp Lys Lys Ala Tyr Tyr Leu Glu Pro Leu Gly Leu Gln
 660 665 670
 Asp Leu Gln Leu Ser Ala Thr Asn Pro Glu Asp Ile Asn Thr Ser Met
 675 680 685
 Met Tyr Gln Asn Pro Tyr Trp Pro Ala Gly Thr Gly Lys Ala Leu Glu
 690 695 700

<210> 8985

<211> 159

<212> PRT

<213> B.fragilis

<400> 8985

Ile Thr Asn Phe Leu Lys Gln Gln Pro Met Thr Leu Ile Lys Ser Ile
 1 5 10 15
 Ser Gly Ile Arg Gly Thr Ile Gly Gly Gly Ala Gly Glu Gly Leu Asn
 20 25 30
 Pro Leu Asp Ile Val Lys Phe Thr Ser Ala Tyr Ala Thr Leu Ile Arg
 35 40 45
 Lys Thr Cys Lys Ser Lys Ser Asn Lys Ile Val Val Gly Arg Asp Ala
 50 55 60
 Arg Ile Ser Gly Glu Met Val Lys Asn Val Val Val Gly Thr Leu Met
 65 70 75 80
 Gly Met Gly Trp Asp Val Val Asp Ile Asp Leu Ala Ser Thr Pro Thr
 85 90 95

Thr Glu Leu Ala Val Thr Met Glu Arg Ala Cys Gly Gly Ile Ile Leu
 100 105 110
 Thr Ala Ser His Asn Pro Lys Gln Trp Asn Ala Leu Lys Met Val Asp
 115 120 125
 Glu His Gly Glu Phe Leu Asn Ala Ala Glu Gly Gln Glu Val Leu Arg
 130 135 140
 Ile Ala Ala Ala Glu Gly Val Asp Tyr Ala Asp Val Asp His Leu
 145 150 155

<210> 8986
 <211> 136
 <212> PRT
 <213> B.fragilis

<400> 8986
 Lys Ile Gly Tyr Leu Val Val Leu Val Gln Cys Phe Leu Lys Phe Thr
 1 5 10 15
 Asn Ile Val Glu Ile Gly Val Tyr Ile Leu Val Cys Thr Leu Met Ser
 20 25 30
 His Leu Arg Arg Tyr Asn Ile Val Ala Val Arg Phe Val Glu His Asp
 35 40 45
 Ile Lys Ala Asn Asp Thr Thr Cys Phe Asn Val Val Leu Pro Gly Phe
 50 55 60
 Glu Asn Tyr Pro Asn Tyr Tyr Thr Tyr Pro Asp Val Phe Arg Tyr Val
 65 70 75 80
 Asp Asn Gly Thr Ser Val Ala Gly Val Phe Thr Glu Gly Ser Met Tyr
 85 90 95
 Ala Lys Tyr Gly Thr Thr Asp Val Pro Pro Gly Trp Leu Leu Ala Leu
 100 105 110
 Lys Tyr Val Thr Asn Tyr Ala His Val Arg Met Ile Gly Leu His His
 115 120 125
 Gly Ala Gly Arg Ile Arg Ala Asn
 130 135

<210> 8987
 <211> 76
 <212> PRT
 <213> B.fragilis

<400> 8987
 Ser Thr Val Ile His Ile Thr Glu Asn Val Arg Ile Ser Ile Val Ile
 1 5 10 15
 Arg Ile Ile Phe Glu Thr Gly Lys His His Ile Glu Ala Ser Gly Ile
 20 25 30
 Val Arg Leu Asp Val Val Leu Tyr Lys Ala Tyr Gly Tyr Asn Ile Val
 35 40 45
 Pro Ser Lys Met Gly His Gln Ser Ala Asn Gln Tyr Val Asn Pro Tyr
 50 55 60
 Phe Tyr Asp Ile Arg Lys Phe Gln Lys Ala Leu Asn
 65 70 75

<210> 8988
 <211> 219
 <212> PRT
 <213> B.fragilis

<400> 8988
 Lys Met Tyr Ser Ser Thr Lys Thr Val Ser Ala Phe Ser Val Leu Leu
 1 5 10 15

Pro	Asp	Gly	Arg	Thr	Lys	Trp	Arg	Trp	Asp	Thr	Gly	Arg	Ser	Met	Gly
			20					25					30		
Val	Glu	Phe	Met	Ala	Gln	Lys	Thr	Ile	Gly	Lys	Thr	Thr	Gly	Trp	Leu
		35					40					45			
Ala	Tyr	Thr	Leu	Ala	Lys	Ser	Asp	Arg	Lys	Phe	Ala	Thr	Gly	Gly	Ile
	50					55				60					
Asn	Asn	Gly	Glu	Arg	Phe	Pro	Tyr	Lys	Tyr	Asp	Arg	Arg	His	Asn	Ile
65					70					75				80	
Asp	Leu	Thr	Leu	Asn	His	Arg	Phe	Asn	Glu	Arg	Ile	Asp	Val	Ser	Ala
				85					90					95	
Ser	Trp	Ile	Phe	Thr	Thr	Gly	Gly	Thr	Thr	Thr	Ile	Pro	Thr	Glu	Leu
			100					105					110		
Thr	Gly	Ile	Ile	Arg	Pro	Gly	Asp	Asn	Asp	Ser	Ser	Ile	Glu	Glu	Gly
		115					120					125			
Asp	Tyr	Val	Lys	His	Arg	Asn	Asn	Tyr	Arg	Leu	Pro	Ala	Thr	His	Arg
	130					135					140				
Leu	Asn	Val	Gly	Val	Asn	Phe	Ser	Lys	Lys	Thr	Lys	His	Gly	Met	Arg
145					150					155					160
Ile	Trp	Asn	Val	Ser	Ile	Tyr	Asn	Val	Tyr	Asn	Ala	Met	Asn	Pro	Thr
				165					170					175	
Leu	Ile	Tyr	Arg	Thr	Tyr	Lys	Lys	Thr	Glu	Tyr	Thr	Gln	Gly	Glu	Gln
			180					185					190		
Ala	Gln	Gly	Asn	Arg	Ile	Pro	Val	Ile	Arg	Lys	Phe	Thr	Leu	Leu	Pro
	195					200						205			
Cys	Ile	Pro	Ser	Phe	Ser	Tyr	Thr	Tyr	Lys	Phe					
	210					215									

<210> 8989

<211> 360

<212> PRT

<213> B.fragilis

<400> 8989

Val	Gln	Arg	Phe	Ile	Val	Phe	Leu	Pro	Thr	Gln	Tyr	Leu	Tyr	Lys	Gln
1				5					10					15	
Val	Met	Leu	Thr	Lys	Val	Ile	Ala	Gln	Ala	His	Ile	Asp	His	Phe	Thr
		20						25				30			
Lys	Trp	Phe	Glu	Arg	Ala	Asp	Lys	Ile	Val	Ile	Val	Ser	His	Val	Ser
		35				40						45			
Pro	Asp	Gly	Asp	Ala	Ile	Gly	Ser	Ser	Leu	Gly	Leu	Tyr	His	Phe	Leu
	50					55					60				
Asp	Ser	Gln	Asp	Lys	Ile	Val	Asn	Val	Ile	Val	Pro	Asn	Ala	Phe	Pro
65				70						75					80
Asp	Phe	Leu	Lys	Trp	Met	Pro	Gly	Ser	Lys	Asp	Ile	Leu	Leu	Tyr	Asp
				85					90					95	
Arg	Tyr	Gln	Glu	Phe	Ala	Asp	Lys	Leu	Ile	Met	Glu	Ala	Asp	Val	Ile
			100					105					110		
Cys	Cys	Leu	Asp	Phe	Asn	Ala	Leu	Lys	Arg	Ile	Asp	Glu	Met	Ser	Asp
		115					120					125			
Ile	Val	Ala	Ala	Ser	Pro	Gly	Arg	Lys	Ile	Met	Ile	Asp	His	His	Leu
	130					135					140				
Tyr	Pro	Glu	Asp	Phe	Cys	Arg	Ile	Thr	Ile	Ser	His	Ala	Glu	Ile	Ser
145					150					155					160
Ser	Thr	Ser	Glu	Leu	Val	Phe	Arg	Leu	Ile	Cys	Arg	Met	Gly	Tyr	Phe
				165					170					175	
Ser	Asp	Ile	Ser	Lys	Glu	Gly	Ala	Glu	Cys	Ile	Tyr	Thr	Gly	Met	Met
			180					185					190		
Thr	Asp	Thr	Gly	Gly	Phe	Thr	Tyr	Asn	Ser	Asn	Asn	Arg	Glu	Ile	Tyr
		195					200					205			

Phe Ile Ile Ser Glu Leu Leu Ser Lys Gly Ile Asp Lys Asp Asp Ile
 210 215 220
 Tyr Arg Lys Val Tyr Asn Thr Tyr Ser Glu Ser Arg Leu Arg Leu Met
 225 230 235 240
 Gly Tyr Val Leu Ser Asn Met Lys Val Tyr Lys Asp Tyr Lys Ser Ala
 245 250 255
 Leu Ile Ser Leu Thr Lys Glu Glu Gln Gly Lys Phe Asp Tyr Ile Lys
 260 265 270
 Gly Asp Ser Glu Gly Phe Val Asn Ile Pro Leu Ser Ile Lys Asn Val
 275 280 285
 Cys Phe Ser Cys Phe Leu Arg Glu Asp Thr Glu Lys Lys Met Ile Lys
 290 295 300
 Ile Ser Leu Arg Ser Val Gly Lys Phe Pro Cys Asn Arg Leu Ala Ala
 305 310 315 320
 Glu Phe Phe Asn Gly Gly Gly His Leu Asn Ala Ser Gly Gly Glu Phe
 325 330 335
 Tyr Gly Thr Met Glu Glu Ala Val Lys Val Phe Glu Gln Ala Leu Glu
 340 345 350
 Lys Tyr Lys Pro Leu Leu Lys Glu
 355 360

<210> 8990
 <211> 78
 <212> PRT
 <213> B.fragilis

<400> 8990
 Arg Thr Leu Ser Asp Pro Tyr Gln Arg Thr Ser Arg Thr Ile Thr Lys
 1 5 10 15
 Cys Ala Phe Lys Ala Tyr Ser Leu Leu Phe Val Asp Tyr Thr Thr Val
 20 25 30
 Ala Glu Gln Asn Pro Glu Arg Asn Glu Asn Val Ile Ser Glu Leu Asp
 35 40 45
 Thr Ala Thr Glu Arg Val Lys Thr Ser Thr Glu Ala Leu Pro Tyr Ser
 50 55 60
 Ser Phe His Ile Ser Leu Val Ile Pro Ile Ile Arg Ser Ile
 65 70 75

<210> 8991
 <211> 154
 <212> PRT
 <213> B.fragilis

<400> 8991
 Arg Gln Phe Pro Phe Ile Leu Phe Leu Cys Ala Asn Asn Lys Ser Phe
 1 5 10 15
 Ala Phe Lys Thr Leu Val Ile Cys Ile Gln Arg Thr Ser Phe Asn Thr
 20 25 30
 Val Leu Lys Gln Ser Leu Phe Leu Ile Gly Ser Leu Ile Leu Gln Thr
 35 40 45
 Lys Asp Phe Ser Trp Leu Val Met Leu Thr Val Tyr Gly Val Asp Ser
 50 55 60
 Val Leu Thr Ile Ile His Arg Leu Leu Leu His Glu Asn Ile Gly Leu
 65 70 75 80
 Pro His Arg Lys His Leu Tyr Gln Ile Met Val Asn Glu Leu Arg Ile
 85 90 95
 Pro His Val Val Val Ser Leu Val Tyr Met Ile Val Gln Ile Val Ile
 100 105 110
 Ile Ile Gly Tyr Leu Tyr Cys Arg Gly Tyr Gly Asp Trp Tyr Leu Leu

	115		120		125
Gly	Cys	Ile	Leu	Leu	Leu
	130		135		140
Tyr	Phe	His	Leu	His	Leu
145			150		

<210> 8992
 <211> 374
 <212> PRT
 <213> B.fragilis

<400> 8992

Ile	Leu	Leu	Leu	Tyr	Leu	His	Ile	Leu	Asn	Phe	Lys	Ala	Leu	Phe	Asn
1			5					10					15		
Met	Phe	Asn	Ser	Phe	Gly	Asn	Ile	Phe	Arg	Leu	Thr	Ser	Phe	Gly	Glu
		20					25					30			
Ser	His	Gly	Lys	Gly	Ile	Gly	Gly	Val	Ile	Asp	Gly	Phe	Pro	Ala	Gly
		35				40					45				
Ile	Val	Ile	Asp	Glu	Glu	Phe	Val	Gln	Gln	Glu	Leu	Asn	Arg	Arg	Arg
50					55					60					
Pro	Gly	Gln	Ser	Val	Ile	Thr	Thr	Ser	Arg	Lys	Glu	Ala	Asp	Lys	Val
65				70						75				80	
Glu	Phe	Leu	Ser	Gly	Ile	Phe	Glu	Gly	Lys	Ser	Thr	Gly	Cys	Pro	Ile
			85						90				95		
Gly	Phe	Ile	Val	Trp	Asn	Glu	Asn	Gln	His	Ser	Asn	Asp	Tyr	Asn	Asn
			100					105					110		
Leu	Glu	Lys	Val	Tyr	Arg	Pro	Ser	His	Ala	Asp	Tyr	Thr	Tyr	Thr	Val
		115					120					125			
Lys	Tyr	Gly	Ile	Arg	Asp	His	Arg	Gly	Gly	Gly	Arg	Ser	Ser	Ala	Arg
130						135					140				
Glu	Thr	Ile	Ser	Arg	Val	Val	Gly	Gly	Ala	Leu	Ala	Lys	Leu	Ala	Leu
145				150						155				160	
Arg	Gln	Leu	Gly	Ile	His	Ile	Thr	Ala	Tyr	Thr	Ser	Gln	Val	Gly	Pro
			165						170					175	
Ile	Lys	Leu	Glu	Gly	Asn	Tyr	Thr	Asp	Tyr	Asp	Leu	Asp	Leu	Ile	Glu
		180						185					190		
Thr	Asn	Pro	Val	Arg	Cys	Pro	Asp	Pro	Glu	Lys	Ala	Lys	Glu	Met	Gln
		195					200					205			
Asp	Leu	Ile	Tyr	Lys	Ile	Lys	Gly	Glu	Gly	Asp	Thr	Ile	Gly	Gly	Val
210					215						220				
Leu	Thr	Cys	Val	Ile	Lys	Gly	Cys	Pro	Ile	Gly	Leu	Gly	Gln	Pro	Val
225				230					235					240	
Tyr	Gly	Lys	Leu	His	Ala	Ala	Leu	Gly	Asn	Ala	Met	Leu	Ser	Ile	Asn
			245						250					255	
Ala	Ala	Lys	Ala	Phe	Glu	Tyr	Gly	Asp	Gly	Phe	Lys	Gly	Leu	Lys	Gln
		260						265					270		
Lys	Gly	Ser	Glu	Gln	Asn	Asp	Val	Phe	Tyr	Asn	Asn	Asn	Gly	Arg	Ile
		275				280						285			
Glu	Thr	Arg	Thr	Asn	His	Ser	Gly	Gly	Ile	Gln	Gly	Gly	Ile	Ser	Asn
290					295						300				
Gly	Gln	Asp	Ile	Phe	Phe	Arg	Val	Ala	Phe	Lys	Pro	Val	Ala	Thr	Val
305				310						315				320	
Leu	Met	Glu	Gln	Glu	Thr	Val	Asn	Ile	Asp	Gly	Ile	Asp	Thr	Thr	Leu
			325						330					335	
Lys	Ala	Arg	Gly	Arg	His	Asp	Pro	Cys	Val	Leu	Pro	Arg	Ala	Val	Pro
		340					345						350		
Ile	Val	Glu	Ala	Met	Ala	Ala	Met	Thr	Ile	Leu	Asp	Tyr	Tyr	Leu	Leu
		355				360						365			
Asp	Arg	Met	Thr	Gln	Leu										

115 120 125
 130 135 140
 145 150
 155 160 165 170 175 180 185 190 195 200 205 210 215 220 225 230 235 240 245 250 255 260 265 270 275 280 285 290 295 300 305 310 315 320 325 330 335 340 345 350 355 360 365

370

<210> 8993
 <211> 370
 <212> PRT
 <213> B.fragilis

<400> 8993

Asn	Gln	Val	Phe	Phe	Thr	Leu	Leu	Ser	Leu	Phe	Ser	Val	Ile	Phe	Ser
1				5					10					15	
Ile	Phe	Val	Arg	Pro	Thr	Thr	Gln	Thr	Ser	Gly	Met	Gly	Asp	Asp	Lys
			20					25					30		
Asn	Lys	Arg	Ile	Asp	Phe	Val	Asp	Leu	Thr	Lys	Gly	Val	Cys	Ile	Ile
		35					40					45			
Leu	Val	Val	Met	Ala	His	Ile	Gly	Gly	Ala	Phe	Glu	Lys	Leu	Asp	Tyr
	50					55					60				
His	Ser	Met	Ile	Ala	Ser	Phe	Arg	Met	Pro	Leu	Tyr	Phe	Phe	Ile	Ser
65					70					75					80
Gly	Ile	Phe	Phe	Lys	Ser	Tyr	Glu	Gly	Leu	Phe	Gly	Phe	Phe	Ile	Arg
				85					90					95	
Lys	Ile	Asn	Lys	Leu	Ile	Ile	Pro	Phe	Leu	Phe	Phe	Tyr	Leu	Ser	Ala
			100					105					110		
Phe	Phe	Leu	Lys	Tyr	Ile	Val	Trp	Lys	Ile	Ala	Pro	Gly	Val	Phe	Gln
			115				120					125			
Leu	Pro	Val	Ser	Trp	Thr	Glu	Leu	Leu	Val	Val	Phe	His	Asp	His	Ala
	130					135					140				
Leu	Ile	Lys	Phe	Asn	Pro	Pro	Ile	Trp	Phe	Leu	Leu	Ala	Leu	Phe	Asn
145					150					155					160
Cys	Asn	Ile	Leu	Phe	Tyr	Leu	Val	His	Ser	Leu	Arg	Asn	Arg	Arg	Leu
				165					170					175	
Gly	Leu	Met	Phe	Ala	Leu	Thr	Leu	Leu	Ile	Gly	Thr	Ala	Gly	Phe	Tyr
			180					185					190		
Met	Gly	Lys	His	Gln	Ile	Glu	Leu	Pro	Leu	Tyr	Met	Asp	Val	Ala	Met
		195					200					205			
Ser	Ala	Leu	Pro	Phe	Tyr	Val	Ala	Gly	Phe	Trp	Ile	Arg	Arg	Tyr	Asn
	210					215					220				
Phe	Phe	Leu	Phe	Pro	His	Arg	Phe	Asp	Lys	Leu	Ile	Pro	Leu	Cys	Ile
225					230					235					240
Leu	Ala	Ala	Leu	Ala	Val	Met	Tyr	Phe	Thr	Ala	Thr	Phe	Val	Gly	Met
				245					250					255	
Arg	Thr	Asn	Asn	Tyr	Ala	Gly	Asn	Ile	Phe	Gln	Phe	Trp	Ala	Ser	Ala
			260					265					270		
Phe	Ala	Gly	Ile	Phe	Met	Ile	Met	Leu	Phe	Cys	Lys	Lys	Phe	Lys	Lys
		275					280					285			
Leu	Pro	Val	Ile	Ser	Tyr	Met	Gly	Arg	Tyr	Ser	Val	Ile	Thr	Leu	Gly
	290					295					300				
Ile	His	Ala	Pro	Leu	Leu	His	Phe	Glu	Tyr	Pro	Val	Val	Ser	Arg	Phe
305					310					315					320
Ile	His	Asn	Glu	Trp	Gly	Gln	Ala	Ile	Ala	Leu	Leu	Leu	Leu	Thr	Leu
				325					330					335	
Thr	Val	Cys	Ile	Ile	Ala	Thr	Pro	Ile	Phe	Leu	Lys	Leu	Ile	Pro	Gln
			340					345					350		
Ala	Val	Ala	Gln	Lys	Asp	Phe	Ile	Lys	Thr	Lys	Gln	Ser	Thr	Gln	Gln
		355					360					365			
Gly	Ser														
	370														

<210> 8994
 <211> 158

<212> PRT

<213> B.fragilis

<400> 8994

Arg	Thr	Arg	Pro	Gly	Glu	Lys	Asn	Phe	Tyr	Arg	Ile	Ile	Val	Glu	Gln
1				5					10					15	
Arg	Lys	Tyr	Trp	Lys	Tyr	Tyr	Trp	Glu	Gln	Asn	Asp	Gln	Thr	Cys	Trp
			20					25					30		
Ser	Ser	Ala	Met	Gln	Lys	Ser	Phe	Lys	Leu	Gln	Thr	Asn	Glu	Asp	Val
		35					40					45			
Val	Leu	Thr	Asp	Gly	Lys	Pro	Ser	Thr	Glu	Glu	Asp	Asp	Glu	Asn	Gly
	50					55					60				
Leu	Phe	Gly	Thr	Val	Asn	Asn	Lys	Tyr	Ala	Ile	Phe	Asp	Asp	Ser	Arg
65					70					75					80
Phe	Thr	Asp	Gly	Ser	Tyr	Thr	Met	Asn	Val	Tyr	Asn	Asp	Ile	Tyr	Gly
				85					90					95	
Trp	Gly	Phe	Trp	Gly	Gln	Glu	Tyr	Ile	Trp	Ile	Lys	Thr	Asp	Val	Ser
			100					105					110		
Ile	Pro	Ile	Leu	Ser	Ile	Thr	Glu	Lys	Glu	Tyr	Tyr	Tyr	Phe	Arg	Ser
		115					120					125			
Val	Asn	Leu	Val	Glu	Ser	Asp	Ala	Tyr	Asp	Asn	Asn	Leu	Ser	Glu	Pro
	130					135					140				
Ile	Val	Phe	Pro	Asn	Asn	Trp	Lys	Arg	Arg	Tyr	Arg	Asn	Gly		
145					150					155					

<210> 8995

<211> 913

<212> PRT

<213> B.fragilis

<400> 8995

Leu	Met	Thr	Pro	Leu	Lys	Ala	Asn	Thr	Ile	Ile	Ser	Ser	Ile	Leu	Leu
1				5					10					15	
Leu	Ile	Leu	Leu	Met	Leu	Pro	Tyr	Glu	Ala	Met	Ala	Gln	Arg	Arg	Arg
			20					25					30		
Val	Arg	Glu	Leu	Lys	Gly	Pro	Val	Val	Tyr	Ser	Pro	Pro	Lys	Asn	Asp
		35					40					45			
Ser	Leu	Arg	Val	Asp	Thr	Leu	Lys	Asn	Asp	Thr	Leu	Lys	Ala	Asn	Val
	50					55					60				
Leu	Lys	Ala	Asp	Thr	Leu	Ser	Ala	Glu	Ser	Val	Lys	Lys	Lys	Lys	Gln
65					70				75						80
Pro	Leu	Asp	Ala	Pro	Val	Val	Tyr	Ser	Ala	Asn	Asp	Ser	Ile	Val	Phe
				85					90					95	
Thr	Gln	Gly	Gly	Phe	Ala	His	Leu	Tyr	Gly	Asp	Gly	Lys	Val	Asn	Tyr
			100					105					110		
Glu	Asn	Ile	Glu	Leu	Gly	Ala	Glu	Ile	Ile	Thr	Met	Asn	Met	Asp	Ser
		115					120					125			
Ser	Thr	Val	Tyr	Ala	Arg	Gly	Val	Ile	Asp	Ser	Val	Gly	Val	Glu	Lys
	130					135					140				
Gly	Lys	Pro	Val	Phe	Lys	Asp	Gly	Glu	Thr	Pro	Tyr	Glu	Thr	Lys	Ala
145					150					155					160
Ile	Arg	Tyr	Asn	Phe	Lys	Ser	Lys	Lys	Gly	Phe	Ile	Asn	Asn	Val	Val
				165					170					175	
Thr	Gln	Gln	Gly	Glu	Gly	Tyr	Val	Val	Gly	Asn	Asn	Ala	Lys	Lys	Gly
			180					185					190		
Ala	Asn	Asp	Glu	Leu	Phe	Met	Glu	Asn	Gly	Arg	Tyr	Thr	Thr	Cys	Asp
		195					200					205			
His	His	Asp	His	Pro	His	Phe	Tyr	Met	Gln	Leu	Thr	Lys	Ala	Lys	Val
	210					215					220				

Arg Pro Lys Lys Asn Val Val Thr Gly Pro Ala Tyr Leu Val Val Glu
 225 230 235 240
 Asp Val Pro Leu Pro Leu Ala Val Pro Phe Phe Phe Phe Pro Phe Ser
 245 250 255
 Ser Ser Tyr Ser Ser Gly Phe Val Met Pro Ser Tyr Met Asp Asp Ser
 260 265 270
 Ser Arg Gly Phe Gly Leu Thr Gly Gly Tyr Tyr Phe Ala Val Ser
 275 280 285
 Asp Leu Met Asp Leu Lys Leu Thr Ala Asp Ile Phe Thr Lys Gly Ser
 290 295 300
 Trp Ala Ala Asn Met Glu Thr Asn Tyr Asn Lys Arg Tyr Lys Tyr Ser
 305 310 315 320
 Gly Ser Leu Gln Ala Gly Tyr Gln Val Thr Lys Leu Gly Asp Lys Gly
 325 330 335
 Met Pro Asp Tyr Ser Val Ala Lys Asp Phe Lys Ile Val Trp Asn His
 340 345 350
 Arg Gln Asp Gln Lys Ala Ser Pro Asn Ser Thr Phe Ser Ala Ser Val
 355 360 365
 Asn Phe Ala Thr Ser Ser Tyr Glu Arg Thr Asn Ile Asn Asn Leu Tyr
 370 375 380
 Asn Ser Gln Leu Met Thr Gln Asn Thr Lys Thr Ser Ser Val Ser Tyr
 385 390 395 400
 Ser Arg Ser Phe Pro Asp Gln Lys Leu Thr Leu Ala Gly Thr Phe Asn
 405 410 415
 Ile Ala Gln Thr Met Arg Asp Ser Ser Ile Ala Val Thr Leu Pro Asp
 420 425 430
 Leu Asn Ile Thr Leu Ser Thr Ile Phe Pro Phe Lys Arg Lys Arg Ala
 435 440 445
 Val Gly Glu Glu Arg Trp Tyr Glu Lys Ile Ser Leu Arg Tyr Ser Gly
 450 455 460
 Arg Leu Thr Asn Ser Leu Lys Thr Lys Asp Asp Arg Leu Phe Lys Ala
 465 470 475 480
 Gly Phe Arg Glu Trp Glu Asn Ala Met Gln His Asn Ile Pro Val Gln
 485 490 495
 Ala Thr Phe Thr Leu Phe Lys Tyr Leu Gln Val Val Pro Ser Phe Asn
 500 505 510
 Tyr Thr Glu Arg Trp Tyr Thr Arg Lys Val Met Lys Ser Tyr Asp Glu
 515 520 525
 Thr Thr Gln Lys Trp Asp Thr His Pro Gly Asp Thr Ile His Gly Phe
 530 535 540
 Tyr Arg Val Phe Asn Tyr Ser Ala Ser Leu Ala Leu Ser Thr Lys Met
 545 550 555 560
 Tyr Gly Met Tyr Gln Pro Leu Phe Met Lys Lys Lys Glu Ile Gln Ile
 565 570 575
 Arg His Val Phe Thr Pro Gln Ile Ser Leu Asn Gly Ser Pro Ser Phe
 580 585 590
 Gly Gln Phe Trp Glu Tyr Tyr Arg Asp Ala Asp Gly Asn Asp Gln Tyr
 595 600 605
 Tyr Ser Pro Tyr Ser Ser Gln Gln Phe Gly Thr Ala Pro Arg Glu Lys
 610 615 620
 Ser Gly Thr Val Ser Phe Asp Val Ser Asn Asn Leu Glu Met Lys Tyr
 625 630 635 640
 Arg Asn Lys Lys Asp Ser Leu Val Lys Val Ser Leu Ile Asp Glu Ile
 645 650 655
 Gly Phe Asn Leu Ser Tyr Asn Met Ala Ala Lys Lys Gln Pro Trp Ser
 660 665 670
 Asn Leu Asn Met Arg Leu Arg Met Lys Phe Lys Lys Phe Asn Asn Tyr
 675 680 685
 Thr Leu Asn Met Asn Ala Val Phe Ala Thr Tyr Ala Tyr Thr Phe Asp

690		695		700
Lys Ser Gly Asn Val	Ile Val Gly Asp Arg Thr	Glu Trp Ser Tyr Gly		
705		710		720
Arg Phe Gly Arg Phe	Gln Gly Trp Gly Ser Ser	Ile Asn Tyr Thr Phe		
	725	730		735
Asn Asn Asp Thr Trp	Lys Lys Leu Phe Gly Lys	Asp Lys Asp Asn Asp		
	740	745		750
Gln Lys Lys Lys Lys	Asp Gly Val Asp Glu Glu	Lys Gly Asn Ser Thr		
	755	760		765
Gly Asp Glu Ala Val	Thr Glu Lys Arg Val Glu	Lys Ala Gln Ala Asp		
	770	775		780
Arg Asp Gly Tyr Gln	Val Phe Lys Met Pro Trp	Ser Leu Asn Val Asn		
785		790		800
Tyr Ser Phe Arg Ile	Ser Glu Asp Arg Ser Lys	Pro Ile Asn Arg Asn		
	805	810		815
Thr Met Arg Tyr Pro	Phe Lys Tyr Thr Gln	Asn Ile Asn Met Ser Gly		
	820	825		830
Asn Leu Lys Ile Ser	Asn Asn Trp Ser Phe Thr	Phe Asn Ser Gly Tyr		
	835	840		845
Asp Phe Glu Ala Lys	Glu Ile Thr Gln Thr Ser	Cys Thr Ile Thr Arg		
	850	855		860
Asp Leu His Cys Phe	Asn Met Ser Ala Ser Ile	Ser Pro Phe Gly Arg		
865		870		880
Tyr Arg Tyr Tyr Asn	Phe Thr Ile Arg Ala Thr	Ala Ser Ile Leu Arg		
	885	890		895
Asp Leu Lys Trp Asp	Lys Arg Ser Gln Thr	Gln Ser Asn Ile Gln Trp		
	900	905		910

Tyr

<210> 8996

<211> 376

<212> PRT

<213> B.fragilis

<400> 8996

Lys Tyr Pro Thr	Ile Met Ala Thr	Lys Ile Lys Leu	Asn Asp Cys Val
1	5	10	15
Pro Cys Ile Ala	Ile His Pro Gly	Glu Ile Ile Lys	Asp Glu Leu Asp
	20	25	30
Ala Arg Glu Met	Lys Gln Lys Glu	Leu Ala Ser Leu	Met Ser Met Pro
	35	40	45
Thr Ser Val Leu	Asn Asp Ile Ile	Lys Gly Arg Arg	Ala Val Thr Pro
	50	55	60
Glu Val Ala Val	Leu Leu Gln Glu	Ile Leu Gly Ile	Asp Ala Ser Tyr
65		70	75
Trp Leu Ser Leu	Gln Asn Gln Tyr	Asp Ile Asp Arg	Ala Asn Ile Asn
	85	90	95
Lys Lys Ile Val	Glu Arg Lys Lys	Asn Ile Glu Ile	Trp Lys Val Ile
	100	105	110
Ser Gln Tyr Cys	Ser Val Lys Tyr	Phe Glu Lys Leu	Asn Val Ile Gly
	115	120	125
Thr Lys Ile Ser	Glu Asn Ile Lys	Ile Ile Tyr Ser	Ile Phe Gly Val
	130	135	140
Thr Ser Val Glu	Glu Leu Ile Ala	Ser Phe Ser Ser	Glu Lys Glu Leu
145		150	155
Ser Tyr Phe Lys	Lys Ser Glu Arg	Leu Lys Ser Asp	Pro Ile Asn Ile
	165	170	175
Phe Ser Trp Lys	His Phe Ala Phe	Tyr Gln Ser Ser	Gln Met Leu Asp

180	185	190
Val Ala Asp Phe Asp Glu Asn Ser Leu Glu Arg Leu Val Gln Glu Leu		
195	200	205
Asn Gln Met Phe Val Val Asn Ile Asn Thr Ile Asp Lys Thr Lys Glu		
210	215	220
Ile Leu Ser Arg Tyr Gly Ile Lys Phe Ile Ile Val Pro Lys Phe Asp		
225	230	235
Lys Thr Pro Ile Asp Gly Phe Ser Phe Trp Gln Gly Lys Asn Pro Thr		
245	250	255
Ile Val Leu Thr Leu Arg Leu Asn Lys Ile Asp Asn Tyr Ala Phe Ala		
260	265	270
Leu Leu His Glu Ile Tyr His Val Tyr Met His Leu Phe Asn Asn Arg		
275	280	285
Glu Gln Lys Tyr Ile Ala Ile Glu Gly Ala Glu Ile Asn Lys Cys Glu		
290	295	300
Glu Glu Ala Asn Lys Phe Ala Lys Cys Ser Leu Ile Gly Lys Asp Leu		
305	310	315
Trp Asn Thr Phe Leu Lys Gln His Ser Met Ile Ser Pro His Ala Met		
325	330	335
Gln Met Lys Ile Lys Gln Phe Ala His Gln His Asn Ile Asn Glu Ala		
340	345	350
Ile Val Leu Gly Phe Tyr Gln His Asp Ile Asn Leu Tyr Ser Ile Lys		
355	360	365
Ser Ser Ile Ser Arg Glu Ile Lys		
370	375	

<210> 8997

<211> 64

<212> PRT

<213> B.fragilis

<400> 8997

Ile His Lys Thr Tyr Lys Ala Glu Ile Pro Ile Phe Val Ile Lys Lys		
1	5	10
Arg Leu Leu Ser Lys Ser Ile Ile Thr Lys Lys Ile Phe Tyr Phe Tyr		
20	25	30
Leu Tyr Phe Ser Gly Ile Phe Leu Ser Met Met Ala Ser Asn Thr Arg		
35	40	45
Asp Asn Ser Leu Ile Thr Lys Lys His Phe Cys His Leu Lys Ile Gly		
50	55	60

<210> 8998

<211> 412

<212> PRT

<213> B.fragilis

<400> 8998

Asn Pro Arg Thr Gly Phe Arg Lys Pro Glu Ala Asn Cys Gly Arg Arg		
1	5	10
Lys Gly Leu Gln Val Leu Lys Thr Ser Pro Arg Ser Asn Arg Leu His		
20	25	30
Ile Ala Leu Phe Gly Lys Arg Asn Ser Gly Lys Ser Ser Leu Ile Asn		
35	40	45
Ala Leu Thr Asn Gln Asn Ala Ala Leu Val Ser Asp Ile Ala Gly Thr		
50	55	60
Thr Thr Asp Pro Val Tyr Gln Pro Met Glu Ile His Gly Ile Gly Pro		
65	70	75
Cys Val Phe Ile Asp Thr Ala Gly Phe Asp Asp Glu Gly Glu Leu Gly		
85	90	95

Ser Leu Arg Ile Glu Arg Thr Leu Gln Ala Ala Asp Lys Ala Asp Ile
 100 105 110
 Ala Leu Met Val Cys Cys Asp Thr Glu Leu Ser Glu Glu Gln Arg Trp
 115 120 125
 Ile Glu Leu Leu Lys Glu Arg Asn Ile Pro Tyr Leu Leu Val Leu Asn
 130 135 140
 Lys Ala Asp Leu Leu Glu Lys Pro Asp Glu Val Ala Asp Lys Leu Glu
 145 150 155 160
 Gln Gln Thr Gly Gln His Pro Leu Ile Val Ser Ala Lys Glu Lys Thr
 165 170 175
 Gly Ile Asp Ser Ile Arg Gln Ser Ile Leu His Arg Leu Pro Glu Leu
 180 185 190
 Asn Glu Gln Pro Asp Ile Val Gly Asp Leu Ala Asn Glu Gly Asp Val
 195 200 205
 Val Leu Leu Val Met Pro Gln Asp Ile Gln Ala Pro Lys Gly Arg Leu
 210 215 220
 Ile Leu Pro Gln Val Gln Thr Leu Arg Glu Leu Leu Asp Lys Lys Cys
 225 230 235 240
 Ile Thr Leu Ser Cys Thr Thr Asp Gln Leu Asp Asn Ala Leu Lys Val
 245 250 255
 Leu Ser Ala Pro Pro Ser Leu Ile Ile Thr Asp Ser Gln Val Phe Arg
 260 265 270
 Thr Val Tyr Glu Lys Lys Pro Pro Gln Ser Arg Leu Thr Ser Phe Ser
 275 280 285
 Val Leu Phe Ala His Tyr Lys Gly Asp Ile Asp Tyr Tyr Thr Glu Gly
 290 295 300
 Ala Tyr Ile Ile Asp Gln Leu Thr Glu Asn Ser Arg Val Leu Ile Ala
 305 310 315 320
 Glu Ala Cys Thr His Ala Pro Leu Ser Glu Asp Ile Gly Arg Val Lys
 325 330 335
 Leu Pro Arg Met Leu Arg Lys Arg Ile Gly Glu Gln Leu His Ile Asp
 340 345 350
 Ile Val Ser Gly Asn Asp Phe Pro Lys Asp Leu Asn Cys Tyr Asp Leu
 355 360 365
 Ile Ile His Cys Gly Ala Cys Met Phe Asn Arg Lys His Val Leu Asn
 370 375 380
 Arg Ile Val Lys Ala Lys Ala Gln Gly Val Pro Met Thr Asn Tyr Gly
 385 390 395 400
 Ile Val Ile Ala Tyr Ile Asn Gly Ile Pro Phe His
 405 410

<210> 8999

<211> 213

<212> PRT

<213> B.fragilis

<400> 8999

Ile Tyr Pro Thr Glu Ala Phe Ala Phe Tyr Leu Gly Leu Leu Ile Gly
 1 5 10 15
 Ile Arg Tyr Lys Val Val Arg Ser Leu Lys Cys Leu Tyr Val Phe Gly
 20 25 30
 Ile Cys Ile Leu Ala Met Gly Ser Phe His Trp Val Ser Arg Met Met
 35 40 45
 Asp Arg Pro Val Gln Ser Ile Val Phe Tyr Asn Val Arg Gly Cys Pro
 50 55 60
 Val Val His Cys Ile Glu Ala Cys Gly Lys Ser Trp Leu Ala Tyr Ala
 65 70 75 80
 Asp Ser Ile Pro Asp Glu Arg Arg Leu Ser Arg Ala Val Ala Gly Tyr
 85 90 95

Trp Asn Arg Leu His Leu Asp Val Pro Val Thr Ile Thr Asp Asn Phe
 100 105 110
 His Ser Ser Gly Phe Trp Met Gln Asp His Leu Leu Met Phe Gly Asn
 115 120 125
 Lys Arg Ile Cys Met Val Ser Asp Asn Arg Trp Arg Asn Lys Thr Ala
 130 135 140
 Ala Glu Ser Phe Asn Ile Asp Tyr Leu Tyr Val Cys Lys Gly Tyr Thr
 145 150 155 160
 Gly Lys Leu Glu Ser Leu Val Gly Leu Phe His Cys Arg Glu Val Ile
 165 170 175
 Leu Asp Ser Ser Leu Ser Ala Tyr Tyr Lys Glu Ala Tyr Ser Glu Glu
 180 185 190
 Cys Arg Arg Leu Gly Leu His Phe Ile Ser Leu Ser Asp Glu Gly Ser
 195 200 205
 Val Arg Phe Leu Leu
 210

<210> 9000
 <211> 122
 <212> PRT
 <213> B.fragilis

<400> 9000
 Phe Ile Tyr Leu Ile Lys Thr Ser Met Asn Gln Tyr Glu Thr Val Phe
 1 5 10 15
 Ile Leu Thr Pro Val Leu Ser Asp Val Gln Met Lys Glu Ala Val Glu
 20 25 30
 Lys Phe Lys Gly Ile Leu Gln Ala Glu Gly Ala Glu Ile Ile Asn Glu
 35 40 45
 Glu Asn Trp Gly Leu Lys Lys Leu Ala Tyr Pro Ile Gln Lys Lys Ser
 50 55 60
 Thr Gly Phe Tyr Gln Leu Ile Glu Phe Asn Ala Glu Pro Thr Val Ile
 65 70 75 80
 Asp Lys Leu Glu Leu Asn Phe Arg Arg Asp Glu Arg Val Ile Arg Phe
 85 90 95
 Leu Thr Phe Arg Met Asp Lys Tyr Ala Ala Glu Tyr Ala Ala Lys Arg
 100 105 110
 Arg Ser Val Lys Ser Asn Lys Lys Glu Asp
 115 120

<210> 9001
 <211> 510
 <212> PRT
 <213> B.fragilis

<400> 9001
 Cys Thr Leu Ala Glu Tyr Ser Tyr Lys Pro Tyr Leu Cys Asn Pro Asn
 1 5 10 15
 Ser Lys Tyr Ser Asn Met Ala Phe Thr Asn Asn Val Met Ile Val Arg
 20 25 30
 His Lys Leu Leu Ala Lys Leu Val Asn Leu Trp Lys Glu Asn Lys Leu
 35 40 45
 Thr Asn Glu Ile Asp Arg Leu Pro Ile Glu Leu Ser Pro Arg Arg Ser
 50 55 60
 Arg Pro Leu Gly Arg Cys Ile His Lys Glu Arg Ala Val Tyr Lys
 65 70 75 80
 Tyr Lys Leu Phe Pro Leu Leu Gly Phe Asp Met Thr Asp Glu Thr Asp
 85 90 95
 Glu Leu Thr Pro Leu Ser Glu Tyr Ala Arg Gln Ala Leu Glu Arg Lys

100	105	110
Asn Lys Gln Lys Glu Asn Ile Leu Cys Val Ile Asp Glu Ala Cys Ser		
115	120	125
Ser Cys Val Gln Val Asn Tyr Glu Val Thr Asn Leu Cys Arg Gly Cys		
130	135	140
Val Ala Arg Ser Cys Tyr Met Asn Cys Pro Lys Asp Ala Ile Arg Phe		
145	150	155
Arg Lys Asn Gly Gln Ala Lys Ile Asp His Asp Ala Cys Ile Ser Cys		
165	170	175
Gly Lys Cys His Gln Ser Cys Pro Tyr His Ala Ile Val Phe Ile Pro		
180	185	190
Val Pro Cys Glu Glu Ala Cys Pro Val Lys Ala Ile Ser Lys Asp Glu		
195	200	205
Asn Gly Ile Glu His Ile Asp Glu Ser Lys Cys Ile Tyr Cys Gly Lys		
210	215	220
Cys Leu Asn Ala Cys Pro Phe Gly Ala Ile Phe Glu Ile Ser Gln Ala		
225	230	235
Phe Asp Val Leu Glu Gly Ile Arg Ser Gly Glu Lys Met Ile Ala Ile		
245	250	255
Pro Ala Pro Ser Ile Leu Gly Gln Phe Asn Thr Ser Ile Glu Ala Val		
260	265	270
Tyr Gly Ala Leu Arg Gln Met Gly Phe Ala Asp Val Val Glu Val Ala		
275	280	285
Gln Gly Ala Met Asp Thr Val Ser His Glu Ala Ala Glu Leu Lys Glu		
290	295	300
Lys Leu Glu Glu Gly Gln Pro Phe Met Thr Thr Ser Cys Cys Pro Ser		
305	310	315
Tyr Ile Glu Leu Val Asn Lys His Ile Pro Gly Met Lys Pro Tyr Val		
325	330	335
Ser Ser Thr Gly Ser Pro Met Tyr Tyr Ala Ala Arg Ile Ala Lys Glu		
340	345	350
Arg His Pro Asp Ala Lys Ile Val Phe Ile Gly Pro Cys Val Ala Lys		
355	360	365
Arg Lys Glu Ala Arg Arg Asp Glu Cys Val Asp Tyr Ile Leu Thr Phe		
370	375	380
Glu Glu Met Ala Ser Ile Phe Glu Gly Leu Asp Ile Gln Leu Glu Gln		
385	390	395
Thr Gln Pro Phe Ser Val Leu Tyr Thr Ser Val Arg Glu Ala His Gly		
405	410	415
Phe Ala Gln Ala Gly Gly Val Met Gly Ala Ile Lys Ala Tyr Leu Gly		
420	425	430
Glu Glu Ala Lys Lys Phe Ser Ala Ile Gln Val Ser Asp Leu Asn Lys		
435	440	445
Lys Asn Ile Gly Leu Leu Arg Ala Ala Lys Thr Gly Lys Ala Gln		
450	455	460
Gly Gln Phe Ile Glu Val Met Ala Cys Glu Gly Gly Cys Ile Ser Gly		
465	470	475
Pro Ser Ala His Asn Asp Ala Ile Gly Gly Arg Arg Gln Leu Asn Gln		
485	490	495
Glu Leu Ile Lys Arg Arg Glu Ser Tyr Glu Glu Thr His Arg		
500	505	510

<210> 9002

<211> 801

<212> PRT

<213> B.fragilis

<400> 9002

Ile Gly Ile Ala Glu Lys Asn Tyr Leu Cys Ile Ser Thr Thr His His

1		5		10		15									
Lys	Asp	Lys	Ile	Met	Lys	Lys	Lys	Val	Leu	Ser	Leu	Leu	Ala	Phe	Leu
		20						25					30		
Pro	Ala	Phe	Thr	Thr	Val	Met	Ala	Gln	Gln	Thr	Ala	Glu	Val	Pro	Asp
		35					40					45			
Val	Cys	Ala	Phe	Val	Asn	Pro	Ile	Ile	Gly	Thr	Asn	Gly	Met	Gly	His
	50				55						60				
Thr	Phe	Pro	Gly	Ala	Cys	Ala	Pro	Phe	Gly	Leu	Val	Gln	Leu	Ser	Pro
65					70					75					80
Asp	Thr	Asp	Thr	Ile	Pro	His	Asn	Ile	Asp	Gly	Thr	Tyr	Gln	Arg	Asn
				85					90					95	
Ala	Tyr	Glu	Tyr	Cys	Ala	Gly	Tyr	Gln	Tyr	His	Asp	Pro	Thr	Ile	Val
			100					105					110		
Gly	Phe	Ser	His	Thr	His	Leu	Ser	Gly	Thr	Gly	His	Ser	Asp	Leu	Gly
		115					120					125			
Asp	Ile	Leu	Ile	Met	Pro	Ala	Thr	Gly	Gln	Leu	Lys	Leu	Asn	Pro	Gly
	130					135					140				
Arg	Ala	Gly	Thr	Pro	Asp	Glu	Gly	Tyr	Arg	Ser	Arg	Phe	Ser	His	Asp
145					150					155					160
Thr	Glu	Val	Ala	Arg	Pro	Gly	Tyr	Tyr	Glu	Val	Glu	Leu	Ala	Asp	Tyr
				165					170					175	
Gly	Ile	Lys	Ala	Gln	Leu	Thr	Ala	Thr	Gln	Arg	Val	Gly	Ile	His	Lys
			180					185					190		
Tyr	Thr	Phe	Pro	Asp	Asn	Ala	Asp	Gly	His	Ile	Ile	Leu	Asp	Leu	Ile
		195					200					205			
His	Gly	Ile	Tyr	Asn	Tyr	Asp	Gly	Lys	Thr	Leu	Trp	Ala	Asn	Leu	Arg
	210					215					220				
Val	Glu	Asn	Asp	Thr	Leu	Leu	Thr	Gly	Tyr	Arg	Ile	Thr	Asn	Gly	Trp
225					230					235					240
Ala	Arg	Thr	Asn	Tyr	Thr	Tyr	Phe	Ala	Ile	Ser	Leu	Ser	Gln	Pro	Ile
				245					250					255	
Lys	Asp	Tyr	Gly	Tyr	Thr	Asp	Lys	Gly	Lys	Ala	Leu	Tyr	Lys	Gly	Phe
			260					265					270		
Trp	Arg	Arg	Phe	Asn	Thr	Asp	Arg	Asn	Phe	Pro	Glu	Met	Thr	Gly	Arg
		275					280					285			
Lys	Leu	Val	Ala	Tyr	Phe	Asn	Phe	Asp	Thr	Arg	Gln	Asn	Pro	Glu	Leu
	290					295					300				
Val	Ile	Lys	Val	Ala	Leu	Ser	Ala	Val	Ser	Thr	Glu	Gly	Ala	Val	Lys
305					310					315					320
Asn	Leu	Gln	Ala	Glu	Ala	Ala	Gly	Lys	Thr	Phe	Asn	Gln	Leu	Val	Ala
			325						330					335	
Glu	Ala	Asn	Ser	Ala	Trp	Asn	Arg	Glu	Leu	Asp	Val	Leu	Glu	Ala	Lys
			340					345					350		
Gly	Thr	Pro	Asp	Gln	Leu	Ala	Met	Phe	Tyr	Thr	Ser	Leu	Tyr	His	Thr
		355					360					365			
Met	Ile	Asn	Pro	Ser	Val	Tyr	Met	Asp	Val	Asp	Gly	Arg	Tyr	Arg	Gly
	370					375					380				
Leu	Asp	His	Asn	Ile	His	Thr	Ser	Glu	Gly	Phe	Thr	Asn	Tyr	Thr	Ile
385					390					395					400
Phe	Ser	Leu	Trp	Asp	Thr	Tyr	Arg	Ala	Glu	His	Pro	Phe	Leu	Asn	Leu
			405						410					415	
Leu	Lys	Pro	Arg	Gln	Asn	Thr	Asp	Met	Val	Gln	Ser	Met	Ile	Arg	His
			420					425					430		
Gln	Gln	Gln	Ser	Val	His	Gly	Met	Leu	Pro	Val	Trp	Ser	Leu	Met	Gly
		435					440					445			
Asn	Glu	Gly	Trp	Cys	Met	Ser	Gly	Tyr	His	Ala	Val	Ser	Ala	Leu	Ala
	450					455					460				
Asp	Ala	Val	Ala	Lys	Gly	Ala	Asp	Ile	Ser	Val	Gly	Glu	Ala	Leu	Met
465					470					475					480

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Ala Met Asp His Thr Ala Asn Val Pro Tyr Tyr Glu Gly Val Glu Ala
 485 490 495
 Tyr Lys Arg Leu Gly Tyr Val Pro Phe Asp Gln Ser Gly Thr Ala Ala
 500 505 510
 Ser Thr Thr Leu Glu Tyr Ala Tyr Asp Asp Trp Thr Ile Tyr Arg Thr
 515 520 525
 Ala Leu Leu Ala Gly Asp Asp Gln Leu Ala Asp Leu Tyr Lys Lys Arg
 530 535 540
 Ala Asn Asn Tyr Arg Asn Val Phe Asp Thr Ser Val Gly Phe Ala Arg
 545 550 555 560
 Pro Arg Tyr Ser Asn Gly Glu Phe Arg Lys Glu Phe Asp Ala Met Gln
 565 570 575
 Thr Tyr Gly Glu Gly Phe Ile Glu Gly Asn Ser Trp Asn Phe Ser Phe
 580 585 590
 His Val Pro His Asp Val Ala Gly Leu Ile Arg Leu Met Gly Gly Glu
 595 600 605
 Lys Lys Phe Val Ser Arg Leu Asp Thr Leu Phe Ser Met Ala Leu Pro
 610 615 620
 Arg Lys Tyr Tyr Glu Lys Asn Glu Asp Ile Ala Glu Val Ser Leu Val
 625 630 635 640
 Arg Arg Tyr Val His Gly Asn Glu Pro Ser His His Ile Pro Tyr Leu
 645 650 655
 Tyr Ala Trp Thr Ser Gln Pro Trp Lys Thr Gln Tyr Trp Leu Arg Thr
 660 665 670
 Val Met Asn Arg Met Tyr Lys Asn Asp Ile Asp Gly Leu Gly Gly Asn
 675 680 685
 Asp Asp Cys Gly Gln Met Ser Ala Trp Tyr Leu Phe Thr Ala Met Gly
 690 695 700
 Phe Tyr Pro Val Cys Pro Gly Thr Asp Gln Tyr Val Leu Gly Ala Pro
 705 710 715 720
 Tyr Leu Pro Tyr Ile Arg Met Asn Leu Pro Asn Gly Arg Thr Phe Glu
 725 730 735
 Ile Lys Ala Pro Lys Val Ser Asp Arg Asn Cys Tyr Val Arg Gln Val
 740 745 750
 Lys Leu Asn Gly Lys Val Tyr Asp Lys Met Tyr Ile Thr His Ala Asp
 755 760 765
 Leu Leu Ala Gly Gly Thr Leu Glu Phe Asp Met Ala Ala Ser Pro Asn
 770 775 780
 Lys Lys Arg Gly Leu Ala Lys Glu Ala Lys Pro Tyr Ser Met Ser Glu
 785 790 795 800
 Glu

<210> 9003

<211> 181

<212> PRT

<213> B.fragilis

<400> 9003

Asp Met Lys Ala Phe Phe Ser Phe Val Ala Ala Leu Val Leu Ser Leu
 1 5 10 15
 Ser Met Ala Ala Gln Asn Lys Ser Phe Tyr Asp Phe Thr Val Lys Thr
 20 25 30
 Ile Asp Gly Lys Glu Tyr Pro Leu Ser Gly Leu Lys Gly Lys Lys Val
 35 40 45
 Leu Val Val Asn Val Ala Ser Lys Cys Gly Leu Thr Pro Gln Tyr Ala
 50 55 60
 Glu Leu Gln Glu Leu Tyr Asp Gln Tyr Lys Asp Gln Asn Phe Val Ile
 65 70 75 80

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<210> 9004
<211> 787
<212> PRT
<213> B.fragilis
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Arg	Lys	Glu	Ala	Leu	Val	Arg	Arg	Leu	Lys	Asn	Ser	Lys	Gln	Phe	Asn
1				5					10					15	
Lys	Asn	Met	Lys	Lys	Leu	Ile	Leu	Leu	Leu	Ile	Leu	Ile	Phe	Ser	Leu
			20					25					30		
Pro	Val	Ala	Ala	Gln	Asn	Phe	Thr	Ile	Gly	Lys	Ser	Thr	Phe	Leu	Leu
		35				40						45			
Asn	Gly	Lys	Pro	Phe	Thr	Val	Lys	Ala	Ala	Glu	Leu	His	Tyr	Thr	Arg
	50					55				60					
Ile	Pro	Ala	Pro	Tyr	Trp	Glu	His	Arg	Ile	Glu	Met	Cys	Lys	Ala	Leu
65					70					75					80
Gly	Met	Asn	Thr	Ile	Cys	Leu	Tyr	Val	Phe	Trp	Asn	Ile	His	Glu	Gln
				85					90					95	
Thr	Glu	Gly	Gln	Phe	Asp	Phe	Thr	Gly	Gln	Asn	Asp	Ile	Ala	Ala	Phe
			100					105					110		
Cys	Arg	Leu	Ala	Gln	Lys	His	Gly	Met	Tyr	Val	Ile	Val	Arg	Pro	Gly
		115					120					125			
Pro	Tyr	Val	Cys	Ala	Glu	Trp	Glu	Met	Gly	Gly	Leu	Pro	Trp	Trp	Leu
	130					135					140				
Leu	Lys	Lys	Lys	Asp	Ile	Ile	Leu	Arg	Thr	Leu	Asp	Pro	Tyr	Phe	Met
145				150						155					160
Glu	Arg	Thr	Ala	Ile	Phe	Met	Lys	Glu	Val	Gly	Lys	Gln	Leu	Ala	Pro
				165					170					175	
Leu	Gln	Ile	Thr	Arg	Gly	Gly	Asn	Ile	Ile	Met	Val	Gln	Val	Glu	Asn
				180				185					190		
Glu	Tyr	Gly	Ala	Tyr	Ala	Val	Asp	Lys	Pro	Tyr	Val	Ser	Ala	Ile	Arg
		195					200					205			
Asp	Ile	Val	Lys	Ser	Ala	Gly	Phe	Thr	Glu	Val	Pro	Leu	Phe	Gln	Cys
	210					215					220				
Asp	Trp	Ser	Ser	Thr	Phe	Asp	Arg	Asn	Gly	Leu	Asp	Asp	Leu	Leu	Trp
225					230					235					240
Thr	Ile	Asn	Phe	Gly	Thr	Gly	Ala	Asn	Ile	Glu	Gln	Gln	Phe	Lys	Arg
				245					250					255	
Leu	Lys	Glu	Ala	Arg	Pro	Glu	Thr	Pro	Leu	Met	Cys	Ser	Glu	Phe	Trp
			260					265					270		
Ser	Gly	Trp	Phe	Asp	His	Trp	Gly	Arg	Lys	His	Glu	Thr	Arg	Pro	Ala
	275						280					285			
Lys	Ser	Met	Val	Gln	Gly	Ile	Lys	Asp	Met	Leu	Asp	Arg	Asn	Ile	Ser
	290					295					300				

Phe Ser Leu Tyr Met Ala His Gly Gly Thr Thr Phe Gly His Trp Gly
 305 310 315 320
 Gly Ala Asn Asn Pro Ser Tyr Ser Ala Met Cys Ser Ser Tyr Asp Tyr
 325 330 335
 Asp Ala Pro Ile Ser Glu Pro Gly Trp Thr Thr Asp Lys Tyr Phe Gln
 340 345 350
 Leu Arg Asp Leu Leu Arg Asn Tyr Leu Pro Ala Gly Glu Gln Leu Pro
 355 360 365
 Glu Ile Pro Glu Ala Phe Pro Val Ile Glu Ile Pro Glu Val Glu Phe
 370 375 380
 Thr Gln Ile Ala Pro Leu Phe Ser Asn Leu Pro Glu Ala Lys Glu Ser
 385 390 395 400
 Met Asp Ile Gln Pro Met Glu Ala Phe Asp Gln Gly Trp Gly Thr Ile
 405 410 415
 Leu Tyr Arg Thr Thr Leu Gln Glu Pro Val Glu Asn Gly Thr Thr Met
 420 425 430
 Lys Ile Thr Glu Val His Asp Trp Ala Gln Val Phe Ala Asp Gly Lys
 435 440 445
 Leu Leu Ala Arg Leu Asp Arg Arg Arg Gly Glu Phe Val Leu Gln Leu
 450 455 460
 Pro Ala Leu Lys Lys Gly Thr Arg Ile Asp Ile Leu Val Glu Ala Met
 465 470 475 480
 Gly Arg Val Asn Phe Asp Glu Ser Ile His Asp Arg Lys Gly Ile Thr
 485 490 495
 Glu Lys Val Glu Leu Val Arg Gly Lys Gln Ser Ala Glu Leu Lys Asn
 500 505 510
 Trp Thr Val Tyr Ser Phe Pro Val Asp Tyr Ser Phe Val Gln Asp Lys
 515 520 525
 Arg Tyr Lys Asn Gly Thr Ala Gln Thr Met Pro Ala Tyr Tyr Arg Thr
 530 535 540
 Thr Phe Arg Leu Asp Lys Val Gly Asp Thr Phe Leu Asp Met Ser Thr
 545 550 555 560
 Trp Gly Lys Gly Met Val Trp Val Asn Gly Leu Val Ile Gly Arg Phe
 565 570 575
 Trp Glu Ile Gly Pro Gln Gln Thr Leu Phe Met Pro Gly Cys Trp Leu
 580 585 590
 Lys Glu Gly Glu Asn Glu Ile Ile Val Leu Asp Leu Lys Gly Pro Glu
 595 600 605
 Lys Ala Ser Ile Arg Gly Leu Lys Lys Pro Ile Leu Asp Trp Leu Arg
 610 615 620
 Asn Glu Gly Ala Ser Thr His Arg Lys Glu Gly Glu Gln Leu Asp Leu
 625 630 635 640
 Ser Arg Glu Thr Pro Val Ala Glu Gly Thr Phe Val Pro Gly Asn Gly
 645 650 655
 Trp Gln Glu Val Cys Phe Asp Arg Gln Ser Ile Gly Arg Tyr Phe Cys
 660 665 670
 Leu Glu Ala Leu Ser Ala Gln Lys Gly Lys Lys Ile Ala Ala Ile Ala
 675 680 685
 Glu Leu Asp Val Leu Gly Ala Asp Gly Lys Pro Ile Ser Arg Glu Lys
 690 695 700
 Trp Arg Ile Arg Tyr Ala Asp Ser Glu Glu Thr Arg Ser Gly Asn Cys
 705 710 715 720
 Thr Gly Asp Lys Val Phe Asp Leu Gln Glu Ser Thr Tyr Trp Met Thr
 725 730 735
 Val Ala Lys Asp Ala Tyr Pro His Gln Leu Val Ile Asp Leu Gly Gly
 740 745 750
 Asp Tyr Thr Val Thr Gly Phe Arg Tyr Leu Pro Arg Ala Glu Lys Gly
 755 760 765
 Tyr Pro Gly Met Ile Lys Asp Tyr Arg Val Tyr Val Lys Gly Glu Asp

770

Phe Gln Tyr
785

775

780

<210> 9005
 <211> 359
 <212> PRT
 <213> B.fragilis

<400> 9005

Gln	Asn	His	Phe	Asn	Ile	Lys	Ser	Met	Arg	Arg	Lys	Ile	Met	Met	Ala
1				5					10					15	
Thr	Leu	Ile	Val	Ile	Ala	Val	Asn	Phe	Ile	Trp	Ser	Gly	Gln	Pro	Val
			20					25					30		
Lys	Ala	Cys	Thr	Arg	Ala	Val	Tyr	Ile	Gly	Pro	Asp	Asn	Met	Val	Ile
			35				40					45			
Thr	Gly	Arg	Thr	Met	Asp	Trp	Lys	Glu	Asp	Ile	Gln	Ser	Asn	Leu	Tyr
			50			55					60				
Leu	Phe	Pro	Arg	Gly	Ile	Lys	Arg	Ala	Gly	Tyr	Asn	Lys	Gly	Asn	Thr
65					70					75					80
Val	Glu	Trp	Ile	Ser	Lys	Tyr	Gly	Ser	Ile	Val	Ala	Thr	Gly	Tyr	Asp
				85					90					95	
Ile	Gly	Thr	Cys	Asp	Gly	Met	Asn	Glu	Lys	Gly	Leu	Val	Ala	Ser	Leu
			100					105						110	
Leu	Phe	Leu	Pro	Glu	Ser	Ile	Tyr	Val	Arg	Pro	Asn	Asp	Thr	Arg	Pro
			115				120					125			
Val	Met	Gly	Ile	Ser	Ile	Trp	Thr	Gln	Tyr	Val	Leu	Asp	Asn	Phe	Ala
			130			135					140				
Thr	Val	Ser	Glu	Ala	Val	Ala	Glu	Leu	Lys	Lys	Gln	Thr	Phe	Arg	Ile
145					150					155					160
Asp	Ala	Pro	Asp	Met	Pro	Asn	Gly	Ser	Ala	Ser	Thr	Leu	His	Met	Ala
				165					170					175	
Ile	Thr	Asp	Glu	Thr	Gly	Asn	Ser	Ala	Val	Leu	Glu	Tyr	Ile	Asp	Gly
			180				185						190		
Asn	Leu	Ile	His	Glu	Gly	Lys	Glu	Tyr	Gln	Val	Met	Thr	Asn	Ser	
			195			200					205				
Pro	Arg	Tyr	Asp	Leu	Gln	Leu	Ala	Val	Asn	Asp	Tyr	Trp	Lys	Glu	Val
			210			215					220				
Gly	Gly	Leu	Asn	Met	Leu	Pro	Gly	Thr	Asn	Arg	Ser	Ser	Asp	Arg	Phe
225					230					235					240
Val	Arg	Ala	Ser	Phe	Tyr	Ile	His	Ala	Ile	Pro	Gln	Thr	Ser	Asp	Ala
				245					250					255	
Lys	Ile	Ala	Val	Pro	Ser	Val	Leu	Ser	Val	Met	Arg	Asn	Val	Ser	Val
			260						265				270		
Pro	Phe	Gly	Ile	Thr	Thr	Pro	Asp	Lys	Pro	Tyr	Ile	Ser	Ser	Thr	Arg
			275				280					285			
Trp	Arg	Ser	Val	Ser	Asp	Gln	Lys	Asn	Arg	Val	Tyr	Tyr	Phe	Glu	Ser
			290			295					300				
Thr	Leu	Thr	Pro	Asn	Leu	Phe	Trp	Ile	Asp	Leu	His	Lys	Val	Asp	Phe
305					310					315					320
Ser	Pro	Asn	Ala	Ser	Ile	Lys	Lys	Leu	Ser	Leu	Thr	His	Gly	Glu	Val
			325					330						335	
Tyr	Ala	Gly	Asp	Val	Val	Lys	Asp	Phe	Lys	Asp	Ser	Arg	Ser	Phe	Thr
			340					345						350	
Phe	Met	Phe	Glu	Leu	Pro	Lys									
															355

<210> 9006
 <211> 471

<212> PRT

<213> B. fragilis

<400> 9006

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Ile Thr Asn Phe Leu Lys Gln Gln Pro Met Thr Leu Ile Lys Ser Ile
1      5      10      15
Ser Gly Ile Arg Gly Thr Ile Gly Gly Ala Gly Glu Gly Leu Asn
20      25      30
Pro Leu Asp Ile Val Lys Phe Thr Ser Ala Tyr Ala Thr Leu Ile Arg
35      40      45
Lys Thr Cys Lys Ser Lys Ser Asn Lys Ile Val Val Gly Arg Asp Ala
50      55      60
Arg Ile Ser Gly Glu Met Val Lys Asn Val Val Val Gly Thr Leu Met
65      70      75      80
Gly Met Gly Trp Asp Val Val Asp Ile Asp Leu Ala Ser Thr Pro Thr
85      90      95
Thr Glu Leu Ala Val Thr Met Glu Gly Ala Cys Gly Gly Ile Ile Leu
100     105     110
Thr Ala Ser His Asn Pro Lys Gln Trp Asn Ala Leu Lys Leu Leu Asn
115     120     125
Glu His Gly Glu Phe Leu Asn Ala Ala Glu Gly Gln Glu Val Leu Arg
130     135     140
Ile Ala Ala Ala Glu Glu Phe Asp Tyr Ala Asp Val Asp His Leu Gly
145     150     155     160
Ser Tyr Arg Lys Asp Leu Thr Tyr Asn Lys Lys His Ile Asp Ser Val
165     170     175
Leu Ala Leu Asp Leu Val Asp Val Glu Ala Ile Lys Lys Ala Asp Phe
180     185     190
Thr Val Ala Ile Asp Cys Val Asn Ser Val Gly Gly Ile Ile Leu Pro
195     200     205
Glu Leu Leu Glu Arg Leu Gly Val Lys His Val Glu Lys Leu Tyr Cys
210     215     220
Glu Pro Thr Gly Asn Phe Ala His Asn Pro Glu Pro Leu Glu Lys Asn
225     230     235     240
Leu Gly Asp Ile Met Asn Leu Met Lys Gly Gly Lys Ala Asp Val Ala
245     250     255
Phe Val Val Asp Pro Asp Val Asp Arg Leu Ala Met Ile Cys Glu Asn
260     265     270
Gly Val Met Tyr Gly Glu Glu Tyr Thr Leu Val Thr Val Ala Asp Tyr
275     280     285
Val Leu Lys His Thr Pro Gly Asn Thr Val Ser Asn Leu Ser Ser Thr
290     295     300
Arg Ala Leu Arg Asp Val Thr Arg Lys Tyr Gly Met Glu Tyr Asn Ala
305     310     315     320
Ser Ala Val Gly Glu Val Asn Val Val Thr Lys Met Lys Ala Thr Asn
325     330     335
Ala Val Ile Gly Glu Gly Asn Gly Gly Val Ile Tyr Pro Ala Ser
340     345     350
His Tyr Gly Arg Asp Ala Leu Val Gly Ile Ala Leu Phe Leu Ser His
355     360     365
Leu Ala His Glu Gly Lys Lys Val Ser Glu Leu Arg Ala Thr Tyr Pro
370     375     380
Pro Tyr Phe Ile Ala Lys Asn Arg Val Asp Leu Thr Pro Glu Ile Asp
385     390     395     400
Val Asp Ala Ile Leu Ala Lys Val Lys Asp Ile Tyr Lys Asn Glu Glu
405     410     415
Ile Asn Asp Ile Asp Gly Val Lys Ile Asp Phe Ala Asp Lys Trp Val
420     425     430
His Leu Arg Lys Ser Asn Thr Glu Pro Ile Ile Arg Ile Tyr Ser Glu

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435 440 445
 Ala Ser Thr Met Glu Ala Ala Glu Glu Ile Gly Gln Lys Ile Met Asn
 450 455 460
 Val Ile Asn Glu Leu Ala Lys
 465 470

<210> 9007
 <211> 304
 <212> PRT
 <213> B.fragilis

<400> 9007

Thr Asp Ser Tyr Asn Arg Tyr Arg His Trp Ala Gly Gln Ser Arg Gln
 1 5 10 15
 Thr Leu Ser Pro Leu Val Pro Thr Arg Asn Thr Asn His Arg Arg Gln
 20 25 30
 Lys Leu His Arg Ser Tyr Thr Pro His Pro Glu Arg Pro Met Lys Ala
 35 40 45
 Ile Ile Ile Glu Asp Glu Lys Ala Ala Val Arg Asn Leu Thr Ser Leu
 50 55 60
 Leu Gly Glu Val Cys Pro Gln Ile Glu Ile Val Thr Glu Leu Asp Ser
 65 70 75 80
 Ile Ala Asp Thr Ile Glu Trp Phe Thr Asp His Ser Met Pro Asp Leu
 85 90 95
 Val Phe Met Asp Ile His Leu Ala Asp Gly Ser Ala Phe Glu Ile Phe
 100 105 110
 Glu His Val His Ile Thr Cys Pro Ile Ile Phe Thr Thr Ala Tyr Asp
 115 120 125
 Glu Tyr Ala Leu Arg Ala Phe Lys Val Asn Ser Ile Asp Tyr Leu Leu
 130 135 140
 Lys Pro Ile Gly Arg Gln Asp Ile Glu Gln Ala Leu Glu Lys Leu Thr
 145 150 155 160
 Leu Phe Ser Ser Gly Asn Ser Lys Pro Thr Gly Pro Glu Thr Asn Glu
 165 170 175
 Leu Val Asn Leu Met Arg Met Leu Lys Lys Gln Glu Ser Tyr Lys Thr
 180 185 190
 His Phe Leu Ile Pro Ile Lys Gly Asp Lys Leu Leu Pro Val Ser Val
 195 200 205
 Asp Met Ile Leu Leu Phe Tyr Ile Arg Asp Cys Gln Val Lys Ala Val
 210 215 220
 Leu Thr Asp Gly Thr Glu Tyr Ser Phe Pro Gln Thr Leu Asp Glu Leu
 225 230 235 240
 Thr Glu Cys Leu Asp Pro Thr Leu Phe Phe Arg Ala Asn Arg Gln Tyr
 245 250 255
 Leu Leu Ser Arg Glu Ala Ile Lys Asp Ile Asp Leu Trp Phe Asn Ser
 260 265 270
 Arg Leu Ser Ile Asn Leu Arg His Ser Val Ser Gly Glu Lys Ile Leu
 275 280 285
 Val Ser Lys Ala Arg Val Ala Glu Phe Lys Glu Trp Phe Ser Val Lys
 290 295 300

<210> 9008
 <211> 85
 <212> PRT
 <213> B.fragilis

<400> 9008

Arg Phe Ser Leu Leu Leu Pro Pro Lys Lys Leu Cys Arg Asp Thr Phe
 1 5 10 15

His His Gly Thr Gln Ser Asn Thr Glu Phe Phe Leu Leu Ile Ile Asn
 20 25 30
 Asn Leu Lys Leu Pro Leu Cys Tyr Ser Val Ser Ser Val Val Ser Phe
 35 40 45
 Asn Thr Leu Asn Tyr Phe Phe Ser Ile Gln Leu Ile Ile Val Ser Glu
 50 55 60
 Lys Gly Leu Ser Leu Gly Ala Thr Lys Pro Thr Gln Phe Pro Phe Ser
 65 70 75 80
 Ser Ile Ile Asn Phe
 85

<210> 9009

<211> 293

<212> PRT

<213> B.fragilis

<400> 9009

Thr Met Lys Tyr Thr Asp Arg Glu Leu Asp Arg Leu Leu Glu Lys Leu
 1 5 10 15
 Ile Ala Ser Thr Arg Ser Pro Arg Gly Lys Phe Ser Ala Ala Ala Ser
 20 25 30
 Tyr Gln Ile Leu Glu Lys Arg Leu Pro Arg Pro Ala Leu Arg Leu Phe
 35 40 45
 Ser Leu Arg Thr Leu Ser Ala Val Ala Ala Ile Ala Leu Leu Cys Phe
 50 55 60
 Ile Gly Trp Asn Thr Tyr Cys Tyr Leu Lys Pro Ala Ala Leu Gln Thr
 65 70 75 80
 Ile Ser Thr Leu Ala Asp Thr Arg Thr Ile Lys Leu Pro Asp Gly Thr
 85 90 95
 Glu Val Thr Leu Asn His Phe Ser Ser Leu Thr Tyr Pro Glu Lys Phe
 100 105 110
 Lys Gly Glu His Arg Glu Val Asn Leu Lys Gly Glu Ala Tyr Phe Glu
 115 120 125
 Val Thr Lys Asn Arg Lys His Ser Phe Ile Val Gln Thr Glu Ser Val
 130 135 140
 Asn Val Glu Val Leu Gly Thr His Phe Asn Val Glu Ser Tyr Pro Asp
 145 150 155 160
 Asp Pro Glu Val Lys Thr Thr Leu Leu Glu Gly Ser Val Ala Val Ser
 165 170 175
 Asn Lys Ser Asn Ser Val Arg Ile Val Leu Lys Pro Asn Glu Ser Ala
 180 185 190
 Ile Tyr Asn Lys Glu Lys Lys Ser Met Thr Leu Glu Val Ser Asp Arg
 195 200 205
 Val Ala Glu Glu Ile Ala Trp Arg Asn Gly Glu Leu Ile Phe Thr Asn
 210 215 220
 Leu Pro Leu Gln Glu Ile Ala Arg Gln Leu Ser Asn Thr Phe Gly Val
 225 230 235 240
 Asp Ile Ser Ile Thr Asp Thr Ala Leu Gln Asn Tyr Arg Ile Thr Ala
 245 250 255
 Arg Phe Ser Ser Glu Glu Gly Leu Asp Gln Ile Leu Asp Leu Leu His
 260 265 270
 Thr Val Gly Asn Phe Asn Tyr Ser Tyr Asn Asn Lys Glu Ile Thr Ile
 275 280 285
 Thr Thr Lys Leu Asn
 290

<210> 9010

<211> 369

<212> PRT

<213> B.fragilis

<400> 9010

Arg Arg Glu Tyr Arg Asn Asn Pro Val Tyr Cys Leu Ile Phe Val Pro
 1 5 10 15
 Met Lys Arg Ile Arg Ala Ile Tyr Asn Asp Lys Tyr Leu Leu Ser Thr
 20 25 30
 Leu Ile Ile Ser Leu Ala Val Ala Val Leu Ile His Phe Pro Glu Ser
 35 40 45
 Val Ser Leu Phe Asp Gly Phe Glu Ser His Thr Leu Phe Pro Gly Met
 50 55 60
 Lys Phe Ala Asp Val Ala Asn Glu Ile Leu Phe Thr Phe Leu Ser Leu
 65 70 75 80
 Leu Ile Leu Phe Ala Val Asn Thr Arg Leu Phe His Phe Asn Gln Thr
 85 90 95
 Ser Met Lys Ile Thr Trp Gln Lys Ile Ile Leu Ser Phe Val Leu Thr
 100 105 110
 Trp Ile Leu Ser Asn Phe Leu Gly Gln Cys Phe Val Tyr Leu His Lys
 115 120 125
 Thr Phe Asp Ile Pro Ala Ile Asp Ala Met Val His His Tyr Leu His
 130 135 140
 Pro Leu Arg Asp Phe Ile Met Ser Ser Leu Val Thr Ser Ser Cys Tyr
 145 150 155 160
 Ile Ile Tyr Leu Ile Arg Arg Gln Gln Gln Val Ile Val Glu Asn Glu
 165 170 175
 Gln Leu Lys Ala Glu Asn Ile Arg Asn Gln Phe Glu Val Leu Lys Asn
 180 185 190
 Gln Leu Asn Pro His Met Leu Phe Asn Ser Leu Asn Thr Leu Arg Ser
 195 200 205
 Leu Val Arg Glu Asn Gln Asp Arg Ala Gln Asp Tyr Ile Gln Glu Leu
 210 215 220
 Ser Arg Val Leu Arg Tyr Thr Leu Gln Gly Asn Glu Ser Gln Cys Val
 225 230 235 240
 Thr Leu Arg Glu Glu Met Asp Phe Val Ser Ala Tyr Ile Phe Leu Leu
 245 250 255
 Lys Met Arg Phe Glu Asp Asn Leu Arg Phe Glu Ile Asn Ile Thr His
 260 265 270
 Asn Ser Glu Tyr Leu Leu Pro Pro Met Ser Ile Gln Met Leu Ile
 275 280 285
 Glu Asn Ala Val Lys His Asn Glu Ile Ser Asn Arg Arg Pro Leu Thr
 290 295 300
 Ile Thr Ile Ala Thr Asp Ser Glu Glu Gly Leu Leu Val Ser Asn Pro
 305 310 315 320
 Ile Gln Ser Lys Leu Thr Ala Thr Thr Gly Thr Gly Ile Gly Leu Val
 325 330 335
 Asn Leu Asp Lys Arg Tyr Arg Leu Leu Phe Arg Gln Glu Ile Gln Ile
 340 345 350
 Thr Glu Asp Arg Asn Phe Thr Val Arg Ile Pro Leu Ile Arg Lys Asp
 355 360 365
 Leu

<210> 9011

<211> 465

<212> PRT

<213> B.fragilis

<400> 9011

Ile Asp Leu Tyr Leu Cys Thr Leu Lys Ile Ile Gly Met Thr Gly Gln

[illegible]

<210> 9012
 <211> 118
 <212> PRT
 <213> B.fragilis

<400> 9012

Asn	Pro	Tyr	Leu	Cys	Arg	Lys	Ile	Thr	Asn	Cys	Met	Asn	Ile	Tyr	Thr
1				5					10					15	
Glu	Asp	Glu	Ala	Leu	Ile	Glu	Leu	Leu	Glu	Glu	Gly	Cys	Thr	Asn	Asp
			20					25					30		
Lys	Arg	Tyr	Lys	Arg	Leu	Pro	Lys	Asp	Val	Ile	Lys	Gly	Tyr	Ile	Lys
		35					40					45			
Ala	Tyr	Asn	His	Leu	Lys	Ala	Ala	Thr	Arg	Ile	Glu	Asp	Leu	Phe	Arg
	50					55					60				
Ile	Gly	Ser	Leu	His	Tyr	Glu	Arg	Leu	Lys	Gly	Asp	Leu	Lys	Asp	Phe
65					70					75					80
Glu	Ser	Val	Arg	Cys	Thr	Gly	Arg	Trp	Arg	Leu	Ile	Phe	Gln	Ser	Ser
			85					90						95	
Thr	Ile	Asp	Gly	Ser	Leu	Ile	Ile	Thr	Glu	Ile	Glu	Leu	Ile	Glu	Ile
			100					105						110	
Ser	Asn	His	Tyr	Gly	Asp										
			115												

<210> 9013
 <211> 532
 <212> PRT
 <213> B.fragilis

<400> 9013

Pro	Gly	Cys	Gln	Phe	Phe	Ser	Asp	Leu	Phe	Ser	Ala	Thr	Ala	Gln	Leu
1				5					10					15	
Thr	Ala	Asp	Ile	Asp	Asp	Ile	Ile	Thr	Ile	His	Ser	Thr	Phe	Val	Tyr
			20					25					30		
Trp	Phe	Asn	Ser	Lys	His	Thr	His	Tyr	Phe	Arg	Lys	Lys	Lys	Ile	Asn
		35				40					45				
Asn	Val	Pro	Ile	Tyr	Arg	Val	Pro	His	Phe	Leu	Ser	Ile	Gly	Asn	Phe
	50					55				60					
Tyr	Pro	Phe	Ser	Glu	Ser	Tyr	Leu	Cys	Ser	Arg	Lys	Lys	Ile	Asn	Ile
65				70					75						80
Val	Phe	Met	Lys	Asp	Ser	Ile	Asp	Phe	Gly	Asn	Met	Glu	Ile	Pro	Arg
			85					90						95	
Leu	Phe	Arg	Lys	Leu	Leu	Ile	Pro	Thr	Val	Leu	Gly	Met	Val	Phe	Ser
			100					105					110		
Ala	Val	Phe	Val	Ile	Thr	Asp	Gly	Ile	Phe	Val	Gly	Lys	Gly	Ile	Gly
		115				120						125			
Ser	Asp	Ala	Leu	Ala	Ala	Val	Asn	Ile	Thr	Ala	Pro	Leu	Phe	Met	Ile
	130					135					140				
Thr	Thr	Gly	Ile	Gly	Leu	Met	Phe	Gly	Val	Gly	Ala	Ser	Val	Val	Ala
145					150					155					160
Ser	Ile	His	Leu	Ser	Gln	Gly	Lys	Arg	Lys	Val	Ala	Ser	Ile	Asn	Ile
			165					170						175	
Thr	Gln	Ala	Leu	Ala	Phe	Ser	Ala	Leu	Leu	Ile	Leu	Val	Leu	Ser	Ala
			180					185					190		
Leu	Cys	Cys	Tyr	Phe	Ala	Glu	Pro	Ile	Gly	Arg	Leu	Leu	Gly	Ser	Ser
		195				200					205				
Glu	Arg	Leu	Leu	Pro	Leu	Val	Val	Glu	Tyr	Met	Asn	Trp	Tyr	Val	Pro
	210					215					220				
Phe	Leu	Val	Phe	Tyr	Leu	Leu	Leu	Ser	Ala	Gly	Met	Phe	Tyr	Ile	Arg

225 230 235 240
 Leu Asp Gly Ser Pro Asn Tyr Ala Met Met Cys Asn Ala Val Ser Ala
 245 250 255
 Ile Ile Asn Ile Ile Leu Asp Tyr Val Phe Ile Phe Gln Leu Gly Trp
 260 265 270
 Gly Met Met Gly Ala Ala Phe Ala Thr Ser Leu Gly Thr Met Val Gly
 275 280 285
 Gly Leu Met Thr Leu Ile Tyr Leu Leu Arg Phe Ser Arg Asn Val Gly
 290 295 300
 Ile Tyr Arg Ile Lys Leu Ser Arg Lys Ser Met Arg Leu Thr Cys Arg
 305 310 315 320
 Asn Ile Gly Tyr Met Ile Arg Leu Gly Ser Ser Ala Phe Ile Ser Glu
 325 330 335
 Ala Ser Ile Ala Ser Met Met Phe Leu Gly Asn Tyr Val Phe Ile Ser
 340 345 350
 His Leu Gly Glu Ser Gly Val Ala Ala Phe Ser Ile Val Cys Tyr Phe
 355 360 365
 Phe Pro Ile Ile Phe Met Val Tyr Asn Ala Ile Ala Gln Ser Ala Gln
 370 375 380
 Pro Ile Ile Ser Tyr Asn Phe Gly Gln Gln Asn Pro Gly Arg Val Ala
 385 390 395 400
 Arg Thr Ile Arg Leu Ala Leu Lys Thr Ala Leu Gly Cys Gly Ile Phe
 405 410 415
 Phe Phe Ala Ala Thr Leu Val Phe Asn His Gln Ile Val Gly Leu Phe
 420 425 430
 Ile Asp Lys Ser Tyr Gln Ala Tyr Asp Ile Ala Val Asn Gly Ile Pro
 435 440 445
 Tyr Phe Ala Val Gly Tyr Leu Phe Phe Ala Leu Asn Ile Val Gly Ile
 450 455 460
 Gly Tyr Tyr Gln Ser Ile Glu Arg Ala Arg Arg Ala Thr Val Ile Thr
 465 470 475 480
 Leu Phe Arg Gly Thr Leu Phe Met Leu Ala Gly Phe Leu Leu Leu Pro
 485 490 495
 Pro Val Leu Gly Val Arg Gly Ile Trp Leu Ala Val Pro Leu Gly Glu
 500 505 510
 Leu Leu Thr Leu Leu Leu Ile Ile Gly Ile Tyr Leu Lys Asp Ser Phe
 515 520 525
 Ala Val Arg Arg
 530

<210> 9014

<211> 169

<212> PRT

<213> B.fragilis

<400> 9014

Pro Phe Ile Gln Ser Thr Met Gly Leu Ile Tyr Leu Val Arg Lys Lys
 1 5 10 15
 Lys Phe Arg Thr Ala Glu Gly Ile Arg Glu Leu Tyr Phe Ala Ile Gln
 20 25 30
 Arg Lys Leu Gln Lys Arg Gly Gly Lys Asn Glu Glu Asp Leu Ala Glu
 35 40 45
 Ile Leu Ser Ala Asn Ser Ser Arg Ser Lys Gly Glu Val Leu Ser Ile
 50 55 60
 Leu Thr Asp Leu Pro Asp Val Ile Glu Glu Ile Leu Lys Asn Gly Glu
 65 70 75 80
 Ser Val Ser Ile Arg Gly Leu Gly Ser Phe His Ala Ser Ile Thr Ser
 85 90 95
 Asn Gly Phe Glu His Pro Glu Asp Val Leu Pro His Glu Val Arg Val

	100		105		110										
Ser	Lys	Val	Tyr	Phe	Ile	Ala	Asp	Arg	Lys	Phe	Thr	Gln	Arg	Val	Ser
	115						120					125			
Arg	Met	Lys	Phe	Phe	Arg	Tyr	Pro	Leu	Ser	Lys	Tyr	Phe	Pro	Lys	Asp
	130					135					140				
Leu	Leu	Arg	Pro	Glu	Thr	Ile	Arg	Glu	Glu	Glu	Thr	Arg	Glu	Glu	Glu
145					150					155					160
Pro	Glu	Phe	Ile	Pro	Asp	Asp	Asp	Glu							
			165												

<210> 9015
 <211> 145
 <212> PRT
 <213> B.fragilis

	<400> 9015														
Ile	Ser	Arg	Gln	Leu	Thr	Phe	Val	Pro	Thr	Phe	Lys	His	Leu	Lys	Thr
1				5					10					15	
Met	Phe	Lys	Ala	Ile	Val	Arg	Phe	Ser	Ile	Lys	Lys	Lys	Leu	Phe	Val
		20						25					30		
Gly	Leu	Thr	Thr	Leu	Phe	Leu	Leu	Ile	Gly	Gly	Ile	Tyr	Ala	Met	Leu
	35					40						45			
Thr	Leu	Pro	Ile	Asp	Ala	Val	Pro	Asp	Ile	Thr	Asn	Asn	Gln	Val	Gln
	50					55					60				
Ile	Val	Thr	Val	Ser	Pro	Thr	Leu	Ala	Pro	Gln	Glu	Val	Glu	Gln	Leu
65					70					75					80
Ile	Thr	Met	Pro	Ile	Glu	Ile	Ala	Met	Ser	Asn	Ile	Met	Asn	Val	Glu
				85					90					95	
Asp	Ile	Arg	Phe	Val	Ser	Arg	Phe	Arg	Leu	Ser	Val	Val	Thr	Val	Val
			100					105					110		
Phe	Lys	Glu	Ser	Val	Pro	Thr	Leu	Asp	Ala	Arg	Gln	Leu	Ile	Asn	Glu
		115					120					125			
Gln	Ile	Gln	Ser	Val	Ala	Gly	Glu	Asn	Pro	Pro	Glu	Leu	Gly	Met	Pro
	130					135					140				
Lys															
145															

<210> 9016
 <211> 240
 <212> PRT
 <213> B.fragilis

	<400> 9016														
Glu	Met	Arg	His	Ser	Val	Tyr	Trp	Tyr	Ile	Ile	Tyr	Phe	Leu	Leu	Ser
1				5					10					15	
Glu	Ile	Met	Cys	Met	Phe	Ala	Ile	Glu	Pro	Ile	Tyr	Lys	Ser	Thr	Met
		20						25					30		
Asn	Gly	Asn	Tyr	Val	Ile	Asn	Ile	Gly	Arg	Gln	Leu	Gly	Ser	Gly	Gly
	35					40						45			
Lys	Glu	Ile	Gly	Glu	Lys	Leu	Ala	Ala	Arg	Leu	Gly	Ile	Asp	Phe	Tyr
	50					55					60				
Asp	Lys	Glu	Leu	Ile	Asn	Leu	Ala	Ser	Glu	Glu	Ser	Gly	Leu	Cys	Arg
65					70					75					80
Glu	Phe	Phe	Glu	Lys	Ala	Asp	Glu	Lys	Ala	Ser	Gln	Gly	Ile	Ile	Gly
				85					90					95	
Gly	Leu	Phe	Gly	Met	Arg	Phe	Pro	Phe	Ile	Ser	Asp	Gly	Ala	Met	Pro
		100						105					110		
Cys	Thr	Asn	Cys	Leu	Ser	Asn	Asp	Ala	Leu	Phe	Lys	Ile	Gln	Ser	Asp
		115					120						125		

Val	Ile	Arg	His	Leu	Ala	Ala	Asn	Lys	Ser	Cys	Val	Phe	Val	Gly	Arg
130						135					140				
Cys	Ala	Asp	Tyr	Ile	Leu	Arg	Glu	His	Pro	Arg	Cys	Ala	Asn	Ile	Phe
145					150					155					160
Ile	Ser	Ala	Ser	Gln	Glu	Asp	Arg	Ile	Ala	Arg	Leu	Cys	Arg	Ile	His
				165					170					175	
Gly	Ile	Ser	Glu	Glu	Ala	Ala	Ala	Glu	Lys	Met	Asn	Lys	Ala	Asp	Lys
			180					185					190		
Lys	Arg	Ser	Glu	Tyr	Tyr	Asn	Tyr	Tyr	Ser	Tyr	Lys	Thr	Trp	Gly	Ala
		195					200					205			
Ala	Ala	Thr	Tyr	His	Leu	Cys	Ile	Asp	Ser	Ser	Val	Leu	Gly	Ile	Asp
		210				215					220				
Glu	Thr	Val	Arg	Phe	Ile	Glu	Glu	Phe	Val	Val	Lys	Lys	Leu	Ala	Leu
225					230					235					240

<210> 9017

<211> 779

<212> PRT

<213> B.fragilis

<400> 9017

Tyr	His	Ile	Lys	Asn	Asn	Pro	Ile	Phe	Ile	Pro	Met	Thr	Lys	Pro	Ser
1			5					10						15	
Tyr	Lys	Gln	Trp	Ile	Ala	Ala	Cys	Thr	Leu	Thr	Ser	Thr	Leu	Leu	Leu
		20						25					30		
Gly	Ala	Cys	Gly	Ser	Ala	Pro	Val	Thr	Arg	Asp	Ala	Ser	Ile	Val	Pro
		35					40					45			
Leu	Pro	Asn	Gln	Ile	Gln	Gln	Ser	Gly	Asn	Ala	Phe	Val	Leu	Thr	Pro
		50				55				60					
Asn	Thr	Thr	Ile	Gly	Thr	Thr	Asp	Pro	Glu	Leu	Gln	Pro	Ala	Ala	Gln
65				70					75						80
Tyr	Leu	Lys	Glu	Ile	Leu	Ser	Ala	Ala	Thr	Gly	Tyr	Asp	Leu	Gln	Val
			85						90					95	
Lys	Glu	Gly	Lys	Gly	Thr	Ile	Thr	Leu	Ala	Lys	Ala	Asn	Ile	Glu	Gly
			100					105					110		
Lys	Glu	Gly	Ala	Tyr	Thr	Leu	Ser	Ala	Lys	Ser	Asp	Arg	Ile	Asp	Ile
		115					120					125			
Thr	Gly	Asn	Ser	Tyr	Gly	Gly	Val	Ile	Ala	Gly	Ile	Glu	Ser	Leu	Arg
	130				135						140				
Gln	Leu	Phe	Pro	Pro	Gln	Ile	Glu	Ser	Lys	Gln	Ile	Val	Asp	Ser	Val
145					150					155					160
Ala	Trp	Ala	Ile	Pro	Thr	Ala	Glu	Ile	Gln	Asp	Ala	Pro	Arg	Phe	Glu
			165						170					175	
Trp	Arg	Gly	Ile	Met	Leu	Asp	Val	Ser	Arg	His	Phe	Tyr	Thr	Lys	Glu
			180					185					190		
Glu	Val	Lys	Glu	Leu	Leu	Asp	Leu	Met	Ala	Leu	Tyr	Lys	Met	Asn	Lys
		195					200					205			
Phe	His	Trp	His	Leu	Thr	Asp	Asp	Gln	Gly	Trp	Arg	Ile	Glu	Ile	Lys
	210					215					220				
Lys	Tyr	Pro	Leu	Leu	Thr	Glu	Lys	Gly	Ala	Trp	Arg	Thr	Phe	Asn	Ser
225					230					235					240
His	Asp	Arg	Ser	Cys	Met	Lys	Ser	Ala	Lys	Ser	Glu	Asp	Asn	Pro	Asp
			245						250					255	
Phe	Leu	Ile	Pro	Glu	Asn	Lys	Leu	Arg	Ile	Ile	Glu	Gly	Asp	Thr	Leu
		260						265					270		
Tyr	Gly	Gly	Tyr	Tyr	Thr	Gln	Glu	Asp	Ile	Lys	Glu	Val	Ile	Glu	Tyr
		275					280					285			
Ala	Lys	Val	Arg	Gly	Ile	Asp	Ile	Ile	Pro	Glu	Ile	Asp	Met	Pro	Gly
	290					295					300				

His Met Leu Ala Ala Val Ser Asn Tyr Ser Gly Val Ala Cys Thr Asp
 305 310 315 320
 Lys Val Gly Trp Gly Thr Thr Phe Ser Ser Pro Val Cys Pro Gly Lys
 325 330 335
 Glu Ser Ala Met Glu Phe Cys Lys Asn Val Tyr Ser Glu Leu Ile Asp
 340 345 350
 Leu Phe Pro Tyr Lys Tyr Val His Ile Gly Gly Asp Glu Val Glu Lys
 355 360 365
 Ala Asn Trp Lys Lys Cys Pro Asp Cys Gln Lys Arg Met Arg Asp Asn
 370 375 380
 His Leu Lys Thr Glu Glu Leu Gln Ser Trp Phe Ile His Asp Met
 385 390 395 400
 Glu Lys Phe Phe Asn Ala Lys Gly Lys Glu Met Ile Gly Trp Asp Glu
 405 410 415
 Ile Ile Glu Gly Gly Leu Ser Pro Thr Ala Thr Val Met Trp Trp Arg
 420 425 430
 Ser Trp Ala Lys Asp Ala Pro Ala Lys Thr Thr Gln Gln Gly Asn Ser
 435 440 445
 Ile Ile Phe Thr Pro Asn Gly Gln Phe Tyr Leu Asp Tyr Gln Glu Asp
 450 455 460
 Lys Asn Ser Val Arg Asn Ile Tyr Asn Phe Asn Pro Ala Ile Glu Gly
 465 470 475 480
 Leu Thr Ser Glu Gln Gln Ala Leu Val Lys Gly Val Gln Gly Asn Ile
 485 490 495
 Trp Cys Glu Trp Ile Pro Ser Arg Glu Arg Met Gln Tyr Met Ala Val
 500 505 510
 Pro Arg Leu Leu Ala Ile Ala Glu Leu Gly Trp Ser Gln Pro Ser Gln
 515 520 525
 Lys Asn Trp Asn Asp Phe Ala Gln Arg Met Ala Asn Gln Phe Glu Arg
 530 535 540
 Leu Asn Ile Met Gly Ile Asn Tyr Arg Ile Pro Asp Leu Glu Gly Phe
 545 550 555 560
 His Arg Asn Asn Ala Phe Ile Gly Glu Gly Thr Val Lys Val Thr Cys
 565 570 575
 Leu Asp Pro Asn Ala Glu Ile His Tyr Thr Thr Asp Gly Ser Thr Pro
 580 585 590
 Thr Leu Gln Ser Pro Lys Tyr Glu Gly Pro Ile Gln Val Lys Glu Thr
 595 600 605
 Thr Asp Phe Thr Phe Arg Thr Phe Arg Pro Asn Gly Lys Ala Gly Asp
 610 615 620
 Ile Ser Arg Thr Arg Phe Ile Lys Ser Glu Tyr Ala Pro Ala Thr Thr
 625 630 635 640
 Val Thr Pro Ser Ala Lys Gly Leu Gln Ala Glu Trp Tyr Glu Phe Lys
 645 650 655
 Gly Asn Lys Cys Ala Asp Ile Thr Lys Ala Pro Leu Asn Gly Thr Tyr
 660 665 670
 Pro Ile Glu Lys Val Met Ile Pro Glu Lys Ala Lys Gly Asn Ile Gly
 675 680 685
 Leu Val Ile Lys Gly Phe Ile Asn Val Pro Lys Asp Asp Ile Tyr Thr
 690 695 700
 Phe Ala Leu Leu Ser Asp Asp Gly Ser Thr Leu Val Ile Asp Gly Glu
 705 710 715 720
 Gln Val Ile Asp Asn Asp Gly Pro His Gly Pro Arg Glu Val Ile Gly
 725 730 735
 Gln Lys Ala Leu Ser Lys Gly Tyr His Pro Ile Glu Val Arg Tyr Phe
 740 745 750
 Asp Gln Asn Gly Gly Gln Leu Lys Met Thr Val Thr Gly Thr Glu Gly
 755 760 765
 Asn Glu Ile Pro Thr Ser Asp Leu Tyr Ala Asn

770

775

<210> 9018
 <211> 580
 <212> PRT
 <213> B.fragilis

<400> 9018

Leu	Thr	Pro	Lys	Gly	Phe	Leu	Ile	Arg	Lys	Phe	Ile	Pro	Thr	Phe	Ala
1				5					10					15	
Gln	Ile	Phe	Lys	Lys	Arg	Ala	Met	Ile	Lys	Glu	Asn	Phe	Ile	Lys	Leu
			20					25					30		
Tyr	Glu	Asn	Ser	Phe	Arg	Glu	Asn	Trp	Asp	Leu	Pro	Cys	Tyr	Thr	Asn
		35					40					45			
Tyr	Gly	Glu	Pro	Glu	Ser	Tyr	Thr	Tyr	Gly	Glu	Val	Ala	Glu	Glu	Ile
	50					55					60				
Ala	Lys	Leu	His	Leu	Leu	Phe	Lys	His	Cys	Ser	Leu	Arg	Arg	Gly	Asp
65					70					75					80
Lys	Ile	Ala	Val	Ile	Gly	Lys	Asn	Asn	Ala	Arg	Trp	Cys	Ile	Ala	Tyr
				85				90						95	
Met	Ala	Thr	Ile	Thr	Tyr	Gly	Ala	Ile	Ile	Val	Pro	Ile	Leu	Gln	Asp
			100					105						110	
Phe	Asn	Pro	Asn	Asp	Val	His	His	Ile	Val	Asn	His	Ser	Glu	Ser	Val
		115					120					125			
Phe	Leu	Phe	Thr	Ser	Asp	Thr	Ile	Trp	Glu	Asn	Leu	Glu	Glu	Glu	Arg
	130					135					140				
Leu	Thr	Gly	Ile	Arg	Ala	Val	Phe	Ser	Leu	Thr	Asp	Phe	Arg	Cys	Leu
145					150					155					160
His	Gln	Arg	Asp	Gly	Glu	Thr	Val	Gln	Lys	Phe	Leu	Lys	His	Ile	Asp
				165					170					175	
Gln	Tyr	Met	Thr	Asp	Thr	Tyr	Pro	Lys	Gly	Phe	Arg	Lys	Glu	Asp	Val
			180					185						190	
Leu	Tyr	Thr	Thr	Leu	Ser	Asn	Asp	Lys	Val	Met	Leu	Leu	Asn	Tyr	Thr
		195					200					205			
Ser	Gly	Thr	Thr	Gly	Phe	Ser	Lys	Gly	Val	Met	Leu	Thr	Gly	Asn	Asn
	210					215					220				
Leu	Ala	Gly	Asn	Val	Thr	Phe	Gly	Ile	Arg	Thr	Glu	Leu	Leu	Lys	Lys
225					230					235					240
Gly	Asp	Lys	Val	Leu	Ser	Phe	Leu	Pro	Leu	Ala	His	Ala	Tyr	Gly	Cys
				245					250					255	
Ala	Phe	Asp	Phe	Leu	Thr	Ala	Thr	Ala	Val	Gly	Thr	His	Val	Thr	Leu
			260					265					270		
Leu	Gly	Lys	Val	Pro	Ser	Pro	Lys	Ile	Ile	Met	Lys	Ala	Phe	Glu	Glu
		275					280					285			
Val	Lys	Pro	Asn	Leu	Ile	Ile	Thr	Val	Pro	Leu	Val	Ile	Glu	Lys	Ile
	290					295					300				
Tyr	Lys	Asn	Val	Ile	Gln	Pro	Ile	Ile	Ser	Lys	Lys	Gly	Met	Lys	Trp
305					310					315					320
Ala	Leu	Ser	Ile	Pro	Leu	Leu	Asp	Asn	Gln	Ile	Tyr	Gly	Gln	Ile	Arg
				325					330					335	
Lys	Lys	Leu	Ile	Asp	Ala	Leu	Gly	Gly	Arg	Phe	Lys	Glu	Ile	Ile	Ile
		340						345					350		
Gly	Gly	Ala	Ala	Met	Asn	Pro	Glu	Val	Glu	Glu	Phe	Phe	His	Lys	Ile
		355					360					365			
Lys	Phe	Pro	Phe	Thr	Ile	Gly	Tyr	Gly	Met	Thr	Glu	Cys	Gly	Pro	Leu
		370				375					380				
Ile	Ser	Tyr	Ala	Pro	Trp	Asp	Lys	Phe	Val	Pro	Ser	Ser	Ser	Gly	Lys
385					390					395					400
Ile	Leu	Asp	Ile	Met	Glu	Ala	Arg	Ile	Tyr	Lys	Glu	Asn	Pro	Glu	Ala

[illegible]

Leu Glu Tyr Asn Asn Leu Leu Lys Tyr Thr His Met Lys Gly Leu Leu
1 5 10 15
Lys Asn Leu Gly Leu Leu Leu Ile Leu Val Gly Val Ile Ile Leu Ile
20 25 30
Ala Cys Ser Leu Thr Gly Glu Val Asn Asn Asn Ala Val Leu Gly Gly
35 40 45
Ser Ile Val Leu Val Val Leu Gly Leu Ile Thr Tyr Ile Ala Ile Asn
50 55 60
Lys Arg Ile Ala Asp
65

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<210> 9020
<211> 477
<212> PRT
<213> B.fragilis
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Ala	Gly	Glu	Ile	Ser	Ala	Gln	Gln	Ala	Ala	Thr	Ile	Val	Val	Lys	Thr
			20					25					30		
Thr	Pro	Asp	Asn	Glu	Ile	Ala	Tyr	Trp	Pro	Thr	Gly	Lys	Glu	His	Leu
		35					40					45			
Phe	Cys	Ile	Ala	Leu	Gly	Thr	Lys	Ala	Gln	Ala	Gly	Pro	Leu	Gly	Glu
	50					55					60				
Phe	Val	His	Gln	Phe	Arg	Thr	Asp	Arg	Pro	Gly	Met	Val	Gln	Val	Trp
65					70					75					80
Thr	Gln	Gly	Ser	Asp	Ser	Phe	Thr	Leu	Tyr	Leu	Thr	Pro	Gly	Ser	Lys
				85					90					95	

Asp Thr Ile Thr Val Thr Lys Asp Thr Leu Ile Ile Ser Gly Thr Asn
 100 105 110
 Ser Ala Tyr Asn Arg Cys Leu Lys Thr Val Asn Asp Tyr Gln Lys Tyr
 115 120 125
 Ser Asp Lys Leu Val Tyr Met Gln Pro His Glu Leu Arg Gly Ile Thr
 130 135 140
 Ser Leu Glu Gln Tyr His Arg Leu Ala Asp Ala Arg Met Arg Gln Ala
 145 150 155 160
 Leu Asp Ala Val Asn Thr Ser Gly Leu Asn Glu Glu Phe Leu Ala Glu
 165 170 175
 Gln Arg Ala His Ile Asp Tyr Ile Arg Arg Ser Ile Phe Ile His Ile
 180 185 190
 Ala Arg Gln Leu Ser Arg Lys Glu Lys Leu Pro Glu Asp Trp Gln Arg
 195 200 205
 Glu Leu Thr Glu Val Ile Asn Ser Ser Val Asn Gly Asp Tyr Leu Arg
 210 215 220
 Ser Tyr Arg Gly Ile Gly Phe Phe Val Asn Asp Leu Val Met Met Gln
 225 230 235 240
 Phe Thr Asn Leu Glu Asn Gly Asp Leu Lys Glu Ile Lys Asp Tyr Ala
 245 250 255
 Ser Phe Leu Phe Asp Arg Tyr Arg Lys Phe Phe Thr Gly Asp Asn Leu
 260 265 270
 Gln Tyr Met Gln Ala Gln Leu Ile Tyr Glu Asp Glu Phe Gln Gly Ser
 275 280 285
 Lys Thr Pro Ser Ile Pro Gln Leu Tyr Glu Thr Tyr Arg Ala Glu Phe
 290 295 300
 Pro Asn Ser Pro Phe Leu Asn Val Leu Glu Pro Gly Val Lys Glu Asn
 305 310 315 320
 Leu Arg Phe Gln Asn Ser Arg Ile Thr Asp Lys Asp Tyr His Ile Leu
 325 330 335
 Thr Cys Asp Ser Thr Ile Thr Ser Leu Glu Asp Ala Val Lys Pro Phe
 340 345 350
 Lys Gly Lys Val Val Tyr Ile Asp Val Trp Ala Thr Trp Cys Gly Pro
 355 360 365
 Cys Leu Lys Glu Phe Gln Tyr Leu Pro Ala Leu Lys Glu Lys Ala His
 370 375 380
 Asn Met Asp Val Val Tyr Leu Tyr Ile Ser Ile Asp Arg Pro Glu Glu
 385 390 395 400
 Arg Lys Lys Trp Glu Lys Thr Ile Ala Tyr His Gln Leu Lys Gly Tyr
 405 410 415
 His Leu Leu Val Asn Glu Lys Leu Gly Lys Ser Leu Tyr Thr Glu Leu
 420 425 430
 Gly Asn Glu Arg Gln Ile Leu Ser Ile Pro Cys Phe Val Ile Ile Asp
 435 440 445
 Lys Thr Gly Lys Ile Val Ile Arg His Ala Ala Ala Pro Ser Glu Pro
 450 455 460
 Glu Lys Val Ile Glu Gln Leu Ser Thr Tyr Tyr Asn Lys
 465 470 475

<210> 9021

<211> 423

<212> PRT

<213> B.fragilis

<400> 9021

Lys Ser Asn Lys Lys Asn Pro Phe Thr Leu Ser Arg Phe Arg Asn Ser
 1 5 10 15
 Val Cys Leu Phe Met Lys Arg Arg Lys Met Glu Lys Asn His Tyr Ile
 20 25 30

His Tyr Thr Ala Ala Asp Leu Leu Asn Asp Gly Thr Phe Leu Asp Ser
 35 40 45
 Met Gln His Pro Thr Glu Gln Ser Glu Lys Phe Trp Ser Gln Leu Glu
 50 55 60
 Lys Glu Asn Glu Thr Phe Ala Gly Glu Leu Arg Met Ala Arg Ser Phe
 65 70 75 80
 Leu Met Ala Val Ala Glu Ser Pro Gln Lys Arg Met Thr Asp Asp Glu
 85 90 95
 Val Gly Thr Leu Trp Glu Arg Ile Ser Arg Gln Val Ala Met Glu Lys
 100 105 110
 Arg Val Lys Arg Lys Lys Gln Leu Phe Leu Arg Val Ala Gly Ile
 115 120 125
 Ala Ala Cys Ile Ser Val Leu Ala Leu Ser Ser Tyr Phe Val Phe Ser
 130 135 140
 Leu Ile Ser Phe Tyr Glu Glu Ser Ser Cys Tyr Ser Leu Ala Gly Ile
 145 150 155 160
 Ser Glu Pro Asp Ser Ser Asn Asp Ile Gln Leu Ile Leu Ser Glu Gly
 165 170 175
 Arg Lys Leu Val Met Asp Gly Lys Glu Ser Arg Leu His Tyr Lys Glu
 180 185 190
 Gly Gly Lys Ile Ala Ile Ser Ser Gly Lys Thr Gln Leu Asp Glu Glu
 195 200 205
 Asn Glu Thr Gly Tyr Asn Gln Leu Ile Val Pro Ser Gly Lys Arg Ser
 210 215 220
 Phe Ile Thr Phe Ser Asp Gly Thr Arg Val Ala Val Asn Ala Asn Thr
 225 230 235 240
 Arg Ile Val Tyr Pro Ser Glu Phe Ser Gly His Lys Arg Glu Ile Tyr
 245 250 255
 Val Asn Gly Glu Val Tyr Leu Gln Val Ser Pro Asp Lys Lys His Pro
 260 265 270
 Phe Val Val Lys Thr Asn Arg Met Glu Val Glu Val Leu Gly Thr Glu
 275 280 285
 Phe Asn Val Ser Ala Tyr Asp Phe Thr Lys Asn Gln Ser Val Val Leu
 290 295 300
 Val Ser Gly Lys Val Glu Val Asp Thr Tyr Lys Tyr Pro Lys Lys Val
 305 310 315 320
 Leu Lys Pro Asn Asp Met Leu Thr Tyr Asp Gly Gln Asp Asp Gly Leu
 325 330 335
 Arg Val Asn Thr Val Asp Val Ser Glu Tyr Ile Ser Trp Val Asp Gly
 340 345 350
 Tyr Tyr Cys Phe Asn His Glu Lys Ile Glu Ile Ile Thr Glu Lys Leu
 355 360 365
 Ser Arg Tyr Tyr Gly Lys Arg Val Ile Pro Asp Ser Gly Leu Ile Gly
 370 375 380
 Leu Thr Cys Ser Gly Lys Leu Asp Leu Arg Asp Asp Leu Arg Asp Val
 385 390 395 400
 Leu Glu Val Leu Ser Lys Thr Ile Pro Ala Gln Ile Glu Thr Arg Asp
 405 410 415
 Asn Tyr Phe Leu Leu Thr Lys
 420

<210> 9022

<211> 743

<212> PRT

<213> B.fragilis

<400> 9022

Ser Glu Thr Asn Val Val Val Met Lys Lys Arg Ile Cys Phe Val Leu
 1 5 10 15

Ile Leu Cys Ile Ser Leu Phe Val Phe Ser Pro Val His Ala Gln Gln
 20 25 30
 Arg Lys Ser Val Ala Val Val Leu Ser Gly Gly Gly Ala Lys Gly Val
 35 40 45
 Ala His Ile Gly Ala Leu Lys Val Ile Glu Glu Ala Gly Ile Pro Ile
 50 55 60
 Asp Tyr Ile Val Gly Thr Ser Met Gly Ser Ile Ile Gly Gly Leu Tyr
 65 70 75 80
 Ser Ile Gly Tyr Thr Pro His Gln Leu Asp Ser Met Val Asn His Gln
 85 90 95
 Asn Trp Pro Leu Leu Leu Ser Asp Arg Ile Ser Trp Glu Asp Gln Thr
 100 105 110
 Met Thr Glu Arg Gln Asn Ser Glu Thr Tyr Val Leu Ser Val Pro Leu
 115 120 125
 Lys Lys Asn Leu Lys Ala Asn Val Phe Gly Gly Val Ile Lys Gly Gln
 130 135 140
 Asn Leu Ala Asn Leu Phe Ser Glu Leu Thr Val Gly Tyr His Asp Ser
 145 150 155 160
 Ile Asn Phe Asn Lys Leu Pro Ile Pro Phe Ala Cys Val Ser Glu Asn
 165 170 175
 Ile Val Asn Gly Asp Glu Val Val Phe His Asn Gly Val Leu Ala Thr
 180 185 190
 Ala Met Arg Ala Ser Met Ala Ile Pro Gly Val Phe Thr Pro Val Arg
 195 200 205
 Leu Gly Asp Lys Ile Leu Val Asp Gly Gly Met Lys Asn Asn Phe Pro
 210 215 220
 Thr Asn Ile Ala Arg Thr Met Gly Ala Asp Val Ile Ile Gly Val Asp
 225 230 235 240
 Val Gln Asn Asp Leu Arg Thr Ala Asp Glu Leu Asn Asn Leu Ser Glu
 245 250 255
 Ile Phe Asn Gln Ile Ile Asn Leu Thr Gly Gln Thr Arg Tyr Glu Glu
 260 265 270
 Asn Ile Lys Leu Ala Thr Val Tyr Ile Lys Val Asp Val Lys Gly Tyr
 275 280 285
 Ser Ala Ala Ser Phe Asn Ile Pro Ala Leu Asp Thr Leu Val Asn Arg
 290 295 300
 Gly Glu Glu Ala Ala Arg Glu Gln Trp Thr Ala Leu Gln Lys Leu Lys
 305 310 315 320
 Lys Gly Ile Gly Leu Pro Glu Asn Tyr Val Ala Pro Arg His Gly Pro
 325 330 335
 Phe Ser Ser Leu Trp Ser Ser Lys Asp Ile Phe Val Lys Glu Ile Thr
 340 345 350
 Phe Asp Gly Ile Glu Asp Ser Asp Lys Lys Trp Ile Met His Arg Cys
 355 360 365
 His Leu Lys Glu Asn Ser Lys Met Arg Met Glu Gln Leu Tyr Glu Ala
 370 375 380
 Leu Thr Thr Leu Arg Gly Ser Gln Ala Tyr Ser Asn Val Ser Tyr Lys
 385 390 395 400
 Leu Thr Asp Thr Pro Gln Gly Tyr Gln Leu His Phe Ile Leu Glu Glu
 405 410 415
 Lys Tyr Glu Arg Asn Leu Asn Leu Gly Ile Arg Phe Asp Ser Glu Glu
 420 425 430
 Ile Ala Ser Leu Leu Leu Asn Val Arg Ser Arg Leu Asp Thr Arg Val
 435 440 445
 Pro Ser Trp Val Ser Val Thr Gly Arg Leu Gly Lys Arg Tyr Leu Ala
 450 455 460
 Arg Val Glu Tyr Thr Leu Ala Pro Met Gln Met Arg Asn Phe Asn Phe
 465 470 475 480
 Ala Tyr Gln Phe Glu Tyr Asn Asp Ile Asn Ile Tyr Asp His Gly Arg

485 490 495
 Arg Ser Tyr Asn Thr Thr Tyr Lys Tyr His Ser Gly Glu Phe Gly Phe
 500 505 510
 Ser Asp Val Trp Phe Arg Asn Leu Arg Phe Gly Ala Gly Leu Asn Phe
 515 520 525
 Glu Phe Phe Lys Tyr Lys Asp Phe Leu Tyr Asn Thr Gly Gly Gln Arg
 530 535 540
 Leu Glu Val Lys Pro Gln His Phe Phe Ser Tyr Phe Ala Gln Leu His
 545 550 555 560
 Tyr Asn Thr Tyr Asn Lys Gly Tyr Phe Pro Ser Lys Gly Thr Asp Val
 565 570 575
 Gln Gly Arg Tyr Ser Leu Tyr Thr Asp Asn Leu Thr His Tyr Lys Gly
 580 585 590
 His Ala Pro Phe Ser Ala Leu Ala Ala Ser Trp Ala Gly Val Phe Ser
 595 600 605
 Leu Thr Asp Arg Phe Ala Leu Ile Pro Ser Leu Tyr Gly Arg Val Leu
 610 615 620
 Ile Gly Lys Asn Ile Pro Tyr Pro Tyr Leu Asn Ala Met Gly Gly Glu
 625 630 635 640
 Asn Phe Gly His Tyr Leu Pro Gln Gln Leu Pro Phe Ala Gly Ile Thr
 645 650 655
 Asn Leu Glu Ile Val Asp Asn Ser Val Leu Val Thr Ser Leu Lys Leu
 660 665 670
 Arg Gln Arg Ile Gly Ser Lys Asn Tyr Val Thr Phe Thr Gly Asn Val
 675 680 685
 Ala Phe Arg Asn Asp Asn Phe Phe Asp Ile Trp Gly Ala Lys Pro Val
 690 695 700
 Trp Gly Gly Ser Val Gly Tyr Gly Tyr Asp Ser Leu Phe Gly Pro Leu
 705 710 715 720
 Glu Ala Ser Leu Gly Tyr Ser Ser Arg Ser His Lys Val Gly Phe Tyr
 725 730 735
 Val Asn Leu Gly Tyr Val Phe
 740

<210> 9023
 <211> 196
 <212> PRT
 <213> B.fragilis

<400> 9023
 Lys Pro Cys Asn Met Tyr Asn Asp Glu Leu Ile Glu Ser Ser Lys Ile
 1 5 10 15
 Lys Trp Gln Ser Phe Leu Lys Gly Asp Asp Asp Ala Tyr Ala Trp Leu
 20 25 30
 Tyr Ser Arg Tyr Val Gln Gln Leu Tyr Gln Tyr Gly Cys Arg Phe Thr
 35 40 45
 Thr Asp Thr Glu Met Val Lys Asp Cys Val Gln Asp Val Phe Val Asn
 50 55 60
 Val Tyr Arg Gln Lys Asp Arg Tyr Ser Ser Pro Pro Asp Asn Val Lys
 65 70 75 80
 Ile Tyr Leu Met Ser Ser Leu Arg Asn Ser Ile Phe Asn Val Phe Asn
 85 90 95
 Lys Gly Asn Leu His Asp Thr Tyr Ile Ser Asn Ile Asn Tyr Glu Phe
 100 105 110
 Asp Leu Ser Val Glu Glu Lys Leu Ile Glu Thr Glu Asp Glu Thr Ser
 115 120 125
 Gln Lys His Thr Val Ala His Leu Leu Asn Thr Leu Ser Pro Arg Gln
 130 135 140
 Arg Glu Ile Ile Tyr Tyr Arg Phe Phe Glu Gly Leu Asp Tyr Ser Ala

145 150 155 160
 Ile Cys Glu Leu Met Gly Leu Asn Tyr Gln Ser Ala Tyr Asn Leu Leu
 165 170 175
 Gln Arg Ser Leu Ser Arg Leu Arg Glu Met Tyr Gly Ile Leu Pro Phe
 180 185 190
 Phe Phe Leu Phe
 195

<210> 9024
 <211> 437
 <212> PRT
 <213> B.fragilis

<400> 9024
 Lys Thr Gln Asn Leu Thr Leu Asn Ser Glu Phe Ser Thr Asn Phe Cys
 1 5 10 15
 Tyr Ile Cys Thr Leu Phe Tyr Met Glu Leu Arg Arg Pro His Ile Leu
 20 25 30
 Tyr Ile Leu Ile Cys Leu Trp Leu Leu Val Ser Pro Ser Asn Val Ser
 35 40 45
 Ser Val Trp Ala Lys Asp Phe Val Val Val Ile Asp Ala Gly His Gly
 50 55 60
 Gly His Asp Pro Gly Ala Ile Gly Lys Ile Ser Lys Glu Lys Asn Ile
 65 70 75 80
 Asn Leu Lys Val Ala Leu Lys Leu Gly Asn Leu Ile Lys Gln Asn Cys
 85 90 95
 Asn Asp Val Lys Val Val Tyr Thr Arg Ser Lys Asp Val Phe Ile Pro
 100 105 110
 Leu Asp Arg Arg Ala Glu Ile Ala Asn Asn Ala Lys Ala Asp Leu Phe
 115 120 125
 Ile Ser Ile His Thr Asn Ala Leu Ala Asn Asn Arg Thr Ala Lys Gly
 130 135 140
 Ala Ser Thr Trp Thr Leu Gly Leu Ala Lys Ser Asp Ala Asn Leu Glu
 145 150 155 160
 Val Ala Lys Arg Glu Asn Ser Val Ile Leu Tyr Glu Asp Asp Tyr Lys
 165 170 175
 Thr Arg Tyr Ala Gly Phe Asn Pro Asn Ser Ala Glu Ser Tyr Ile Ile
 180 185 190
 Phe Glu Phe Met Gln Asp Lys Tyr Met Glu Gln Ser Val His Leu Ala
 195 200 205
 Ser Leu Val Gln Lys Gln Phe Arg His His Cys Lys Arg Val Asp Arg
 210 215 220
 Gly Val His Gln Ala Gly Phe Leu Val Leu Lys Ala Ser Ala Met Pro
 225 230 235 240
 Ser Ile Leu Val Glu Leu Gly Phe Ile Ser Thr Pro Glu Glu Glu Arg
 245 250 255
 Tyr Leu Asn Thr Glu Glu Gly Ser Ser Thr Leu Ala Lys Gly Ile Tyr
 260 265 270
 Arg Ala Phe Leu Ser Tyr Lys Arg Glu His Glu Ile Arg Leu Thr Gly
 275 280 285
 Ser Ser Arg Thr Ala Leu Pro Asn Asp Asp Glu Val Thr Asp Thr Glu
 290 295 300
 Val Ala Gln Ile Asp Ser Thr Glu Ser Glu Asn Lys Lys Pro Gln Asn
 305 310 315 320
 Thr Pro Arg Thr Asp Lys Leu Val Thr Glu Ala Lys Thr Gln Arg Pro
 325 330 335
 Ile Val Val Glu Ser Thr Thr Asn Asp Ser Glu Ile Thr Phe Lys Ile
 340 345 350
 Gln Ile Leu Thr Ser Ser Arg Pro Leu Ser Lys Asn Asp Lys Arg Leu

355 360 365
 Lys Gly Leu Lys Asp Val Asp Tyr Tyr Lys Glu Asn Gly Leu Tyr Lys
 370 375 380
 Tyr Thr Tyr Gly Ala Ser Ser Asp Tyr Asn Lys Val Leu Arg Thr Arg
 385 390 395 400
 Arg Asn Thr Val Thr Pro Leu Phe Lys Asp Ala Phe Ile Ile Ala Phe
 405 410 415
 Arg Asn Gly Glu Lys Met Asn Ile Asn Glu Ala Ile Ala Asn Phe Lys
 420 425 430
 Lys Arg Arg Arg Asn Lys
 435

<210> 9025
 <211> 98
 <212> PRT
 <213> B.fragilis

<400> 9025
 Ile Lys Gln Lys Gly Gly Leu Ile Met Ala Gln Gln Val Gln Ser Glu
 1 5 10 15
 Ile Arg Tyr Leu Thr Pro Pro Ser Val Asp Val Lys Lys Lys Tyr
 20 25 30
 Cys Arg Phe Lys Lys Ser Gly Ile Lys Tyr Ile Asp Tyr Lys Asp Pro
 35 40 45
 Glu Phe Leu Lys Lys Phe Leu Asn Glu Gln Gly Lys Ile Leu Pro Arg
 50 55 60
 Arg Ile Thr Gly Thr Ser Leu Lys Phe Gln Arg Arg Ile Ala Gln Ala
 65 70 75 80
 Val Lys Arg Ala Arg His Leu Ala Leu Leu Pro Phe Val Thr Asp Met
 85 90 95
 Met Lys

<210> 9026
 <211> 447
 <212> PRT
 <213> B.fragilis

<400> 9026
 Ile Asn Lys Lys Asp Val Leu Met Asn Arg Phe Asn Tyr Ile Gly Met
 1 5 10 15
 Leu Ala Tyr Val Ala Leu Ser Met Ser Ser Cys Asp Asp Ser Phe Asp
 20 25 30
 Val Ser Ser Lys Ala Asp Gly Val Leu Ala Val Ser Gln Glu Gly Phe
 35 40 45
 Asn Thr Leu Gln Ser Tyr Asn Val Gly Glu Lys Tyr Thr Ala Asp Leu
 50 55 60
 Trp Ile Gln Gln Gly Gly Leu Lys Ser Thr Ala Ser Val Val Ser Phe
 65 70 75 80
 Ser Val Asp Lys Ala Leu Leu Asp Ser Met Asn Ile Ala Asp Gly Thr
 85 90 95
 Ser Tyr Glu Leu Leu Pro Ala Asp Cys Tyr Gln Leu Thr Lys Ser Ser
 100 105 110
 Val Asp Ile Pro Ala Asn Glu Arg Leu Leu Lys Gly Glu Leu Thr Tyr
 115 120 125
 Asp Pro Ala Lys Ile Gln Glu Leu Ser Gly Tyr Asp His Leu Lys Tyr
 130 135 140
 Val Leu Pro Leu Arg Ala Thr Ser Ser Gly Met Pro Phe Val Ser Gly
 145 150 155 160

Arg	Ser	Val	Val	Leu	Leu	Gly	Phe	Lys	Val	Ser	Glu	Pro	Ile	Val	Thr
				165					170					175	
Ile	Met	Asn	Ala	Gly	Val	Glu	Glu	Ile	Asn	Leu	Ala	Glu	Val	Lys	Glu
			180					185						190	
Leu	Pro	Val	Gln	Ile	Gly	Val	Pro	Phe	Thr	Asn	Lys	Trp	Glu	Ile	Ser
		195					200					205			
Cys	Arg	Leu	Glu	Ser	Arg	Gln	Ser	Val	Ile	Asp	Ala	Tyr	Asn	Thr	Ala
	210					215				220					
His	Gly	Thr	Tyr	Phe	Ser	Met	Leu	Pro	Ser	Asp	Ala	Tyr	Ala	Ala	Pro
225					230					235					240
Glu	Thr	Pro	Ile	Leu	His	Ser	Gly	Val	Asn	Gln	Val	Thr	Ala	Thr	Tyr
				245					250						255
Lys	Leu	Lys	Asp	Asp	Val	Leu	Pro	Gly	Asn	Tyr	Met	Leu	Pro	Val	Gln
			260					265						270	
Ile	Ala	Glu	Val	Thr	Ser	Asp	Ala	Thr	Ile	Arg	Ala	Asp	Lys	Asp	Val
		275					280					285			
Tyr	Ala	Ala	Tyr	Ser	Ile	Ile	Lys	Glu	Gly	Asp	Lys	Leu	Ser	Lys	Thr
	290					295					300				
Asp	Trp	Lys	Ile	Val	Ser	Phe	Thr	Thr	Glu	Glu	Ala	Ser	Gly	Glu	Gly
305					310					315					320
Ser	Asn	Asn	Gly	His	Ala	Lys	His	Leu	Ile	Asp	Gly	Asn	Val	Glu	Thr
				325					330					335	
Phe	Trp	His	Ser	Arg	Trp	Gln	Gly	Gly	Ser	Asp	Pro	Leu	Pro	Tyr	Glu
			340				345							350	
Ile	Ile	Ile	Asp	Met	Asn	His	Arg	Val	Lys	Ile	Ala	Gln	Ile	Glu	Leu
		355					360					365			
Leu	Pro	Arg	Gly	Arg	Gly	Ser	Asn	Asn	Pro	Ile	Lys	Val	Ile	Arg	Phe
	370					375					380				
Glu	Ala	Ser	Glu	Asp	Gly	Thr	Asn	Trp	Glu	Ser	Ile	Gly	Gln	Phe	Gly
385					390					395					400
Phe	Thr	Asn	Gln	Asp	Ala	Ala	Leu	Lys	Tyr	Tyr	Val	Lys	Ser	Ser	Thr
				405					410					415	
Ala	Arg	Tyr	Ile	Lys	Leu	Val	Ile	Pro	Asp	Gly	Val	Gly	Asn	Gly	Thr
			420					425					430		
Val	Ala	Ala	Ile	Arg	Glu	Leu	Asp	Val	Arg	Gly	Thr	Val	Val	Asn	
		435					440					445			

<210> 9027

<211> 458

<212> PRT

<213> B.fragilis

<400> 9027

Gln	Leu	Leu	Asn	Val	Asn	Glu	Ile	Gln	Lys	Tyr	Ile	Ala	Glu	Asn	Glu
1				5					10					15	
Ser	Thr	Met	Met	Glu	Asp	Leu	Phe	Ser	Leu	Ile	Arg	Ile	Pro	Ser	Ile
		20						25					30		
Ser	Ala	Leu	Pro	Glu	His	His	Asp	Asp	Met	Leu	Ala	Cys	Ala	Gln	Arg
	35						40					45			
Trp	Thr	Gln	Leu	Leu	Leu	Lys	Ala	Gly	Ala	Asp	Glu	Ala	Ile	Val	Met
	50					55					60				
Pro	Ser	Lys	Gly	Asn	Pro	Ile	Val	Phe	Gly	Gln	Lys	Ile	Val	Asp	Pro
65					70					75					80
Asn	Ala	Lys	Thr	Val	Leu	Ile	Tyr	Ala	His	Tyr	Asp	Val	Met	Pro	Ala
				85					90					95	
Glu	Pro	Leu	Asp	Leu	Trp	Lys	Ser	Gln	Pro	Phe	Glu	Pro	Glu	Ile	Arg
			100					105					110		
Asp	Gly	His	Ile	Trp	Ala	Arg	Gly	Ala	Asp	Asp	Asp	Lys	Gly	Gln	Ala
		115					120						125		

Phe Ile Gln Val Lys Ala Phe Glu Tyr Leu Val Lys Tyr Asn Leu Leu
 130 135 140
 Glu Asn Asn Val Lys Phe Ile Phe Glu Gly Glu Glu Glu Ile Gly Ser
 145 150 155 160
 Pro Ser Leu Glu Ala Phe Cys Glu Glu His Lys Glu Leu Leu Lys Ala
 165 170 175
 Asp Val Ile Leu Val Ser Asp Thr Ser Met Leu Gly Ala Asp Leu Pro
 180 185 190
 Ser Leu Thr Thr Gly Leu Arg Gly Leu Ala Tyr Trp Glu Ile Glu Ile
 195 200 205
 Thr Gly Pro Asn Arg Asp Leu His Ser Gly His Phe Gly Gly Ala Val
 210 215 220
 Ala Asn Pro Ile Asn Val Leu Cys Gly Met Leu Ser Lys Val Ile Asp
 225 230 235 240
 Thr Asp Gly Arg Ile Thr Ile Pro Gly Phe Tyr Asp Ala Val Glu Glu
 245 250 255
 Val Pro Gln Ala Glu Arg Glu Met Ile Ala His Ile Pro Phe Asn Glu
 260 265 270
 Glu Lys Tyr Lys Glu Ala Ile Gly Val Lys Glu Leu Phe Gly Glu Lys
 275 280 285
 Gly Tyr Ser Thr Leu Glu Arg Asn Ser Cys Arg Pro Ser Phe Asp Ile
 290 295 300
 Cys Gly Ile Trp Gly Gly Tyr Thr Gly Glu Gly Ser Lys Thr Val Leu
 305 310 315 320
 Pro Ser Lys Ala Tyr Ala Lys Val Ser Cys Arg Leu Val Pro His Gln
 325 330 335
 Asp His His Val Ile Ser Lys Leu Phe Ala Asp Tyr Ile Arg Gln Ile
 340 345 350
 Ala Pro Ala Thr Val Glu Val Lys Val Thr Ala Met His Gly Gly Gln
 355 360 365
 Gly Tyr Val Cys Pro Ile Ser Leu Pro Ala Tyr Gln Ala Ala Glu Lys
 370 375 380
 Gly Phe Glu Ile Ala Phe Gly Lys Lys Pro Leu Ala Val Arg Arg Gly
 385 390 395 400
 Gly Ser Ile Pro Ile Ile Ser Thr Phe Glu Gln Val Leu Gly Ile Lys
 405 410 415
 Thr Val Leu Met Gly Phe Gly Leu Glu Ser Asp Ala Ile His Ser Pro
 420 425 430
 Asn Glu Asn Phe Ser Leu Asp Ile Phe Arg Lys Gly Ile Glu Ala Val
 435 440 445
 Val Glu Phe His Leu Ile Tyr Gly Lys Lys
 450 455

<210> 9028

<211> 299

<212> PRT

<213> B.fragilis

<400> 9028

Gln Asn Met Lys Leu Ile Thr Lys Glu Val Arg Ile Gly Ile Ala Gly
 1 5 10 15
 Val Ala Ala Leu Cys Leu Leu Val Phe Gly Ile Asn Tyr Leu Lys Gly
 20 25 30
 Ile Asn Met Phe Lys Pro Ala Ser Tyr Phe Tyr Val Lys Phe His Asn
 35 40 45
 Val Asn Gly Leu Ala Gln Ser Ser Pro Val Phe Ala Asp Gly Val Arg
 50 55 60
 Val Gly Ile Val Arg Asp Ile Ala Tyr Asp Tyr Asn Gln Pro Glu Asn
 65 70 75 80

Val Ile Val Glu Val Glu Val Asp Thr Asp Leu Arg Ile Pro Lys Gly
85 90 95
Ser Ser Ala Glu Leu Val Pro Glu Leu Met Gly Gly Val Arg Met Asn
100 105 110
Ile Leu Leu Ala Asn Asn Pro Arg Glu Arg Tyr Thr Val Gly Asp Thr
115 120 125
Ile Pro Gly Thr Leu Asn Asn Gly Met Met Glu Lys Val Ala Ala Met
130 135 140
Met Pro Ala Val Glu Lys Met Leu Pro Lys Leu Asp Ser Ile Leu Thr
145 150 155 160
Ser Leu Asn Thr Ile Met Ala Asp Gln Ser Ile Pro Ala Thr Leu His
165 170 175
Ser Ile Glu Lys Thr Thr Ala Asn Leu Glu Val Thr Ser Arg Gln Leu
180 185 190
Lys Val Leu Met Asn Asn Asp Ile Pro Gln Leu Thr Gly Lys Leu Asn
195 200 205
Thr Ile Gly Asp Asn Phe Val Val Ile Ser Gly Asn Leu Lys Glu Ile
210 215 220
Asp Tyr Ala Ala Thr Phe Lys Lys Ile Asp Thr Thr Leu Ser Asn Val
225 230 235 240
Lys Met Leu Thr Glu Lys Leu Asn Ser Lys Asp Asn Thr Val Gly Leu
245 250 255
Leu Leu Asn Asp Pro Gln Leu Tyr Asn Asn Leu Asn Gln Thr Thr Ile
260 265 270
Asn Ala Ala Asn Leu Leu Glu Asp Leu Lys Glu His Pro Lys Arg Tyr
275 280 285
Val His Phe Ser Leu Phe Gly Lys Lys Asp Lys
290 295

<210> 9029

<211> 297

<212> PRT

<213> B.fragilis

<400> 9029

Lys Lys Met Lys Lys Ile Phe Tyr Pro Val Leu Leu Leu Val Leu Ala
1 5 10 15
Ala Cys Lys Asn Pro Glu Gln Thr Ser Glu Thr Ile Val Pro Ala Pro
20 25 30
Ala Ile Ala Asp Ile Pro Thr Asp Thr Val Thr Thr Gln Val Asp Gly
35 40 45
Ile Thr Ser Ala Thr Ser Lys Pro Asn Gln Val Ser Phe Asn Gly Thr
50 55 60
Ile Val Leu Pro Pro Gln Arg Gln Ala Thr Val Ala Leu Thr Met Gly
65 70 75 80
Gly Val Val Lys His Thr Ser Leu Leu Pro Gly Gln Gln Val Arg Gln
85 90 95
Gly Ala Leu Leu Ala Thr Leu Glu Asn Pro Asp Phe Ile Ala Leu Gln
100 105 110
Gln Thr Tyr Leu Asp Ser His Ala Gln Ala Glu Tyr Leu Gln Ala Glu
115 120 125
Tyr Glu Arg Gln Lys Thr Leu Ser Thr Glu Gln Ala Ala Ser Gln Lys
130 135 140
Lys Phe Gln Gln Ser Lys Ala Asp Tyr Leu Ser Met Lys Ser Lys Leu
145 150 155 160
Glu Ala Thr Ala Ala Gln Leu Thr Leu Leu Gly Ile Val Pro Glu Glu
165 170 175
Leu Leu Lys Ser Gly Ile Gln Pro Leu Leu Gln Val Lys Ala Pro Ile
180 185 190

Ser Gly Tyr Ile Ser Asp Val Ala Met Asn Ile Gly Lys Tyr Ile Gln
 195 200 205
 Pro Gly Glu Ala Leu Cys Glu Val Ile Asp Lys Ser Ala Pro Leu Leu
 210 215 220
 Cys Leu Thr Thr Tyr Glu Lys Asp Leu Ala Asp Met Lys Val Gly Ser
 225 230 235 240
 Pro Val Gln Phe Arg Val Asn Gly Met Gly Lys Thr Val Phe Lys Ala
 245 250 255
 Thr Leu Val Ser Ile Gly Gln Lys Val Asp Glu Val Ser Arg Ser Leu
 260 265 270
 Glu Val Tyr Ala Arg Ile Asp Asp Val Asn Gln Gln Phe Arg Pro Gly
 275 280 285
 Met Tyr Val Thr Ala Arg Ile Gln Lys
 290 295

<210> 9030

<211> 400

<212> PRT

<213> B.fragilis

<400> 9030

Asn Met Met Asn Thr Lys Ser Phe Phe Met Val Ala Ile Gly Val Phe
 1 5 10 15
 Val Leu Ala Ser Cys Asn Leu Asn Gln Val Asp Gln Thr Gly Leu Leu
 20 25 30
 Thr Ala Ser Val Arg Asp Ala Leu Asn Ser Pro Ala Thr Leu Ser Ile
 35 40 45
 Ala Asp Glu Ile Glu Ser Val Glu Tyr Ile Pro Leu Glu Met Thr Asn
 50 55 60
 Asp Asp Ala Ser Leu Ile Asp Gly Val Val Asp Phe Ala Ile Thr Ser
 65 70 75 80
 Lys Tyr Ile Tyr Val Leu Val Gly Lys Glu Ala Arg Ile Val Leu Phe
 85 90 95
 Asp Arg Gln Gly His Phe Leu Arg Thr Phe Leu Arg Gln Gly Gln Gly
 100 105 110
 Pro Asp Asp Phe Asn Gly Met Ile Gly Phe Ile Gln Ala Asp Glu Ala
 115 120 125
 Asp Asn Arg Phe Tyr Val Ile Gly Asn Lys Val Gly Ile Tyr Thr Leu
 130 135 140
 Glu Gly Thr Phe Val Glu Asp Leu Pro Val Asn Ser Pro Ile Ile Tyr
 145 150 155 160
 Ala His His Leu Gly Asn Lys Arg Ile Gly Ala Ile Ala Met Pro Leu
 165 170 175
 Met Pro Phe Gln Asn Gly Ser Phe Gly Ile Gly Val Phe Gln Glu Asp
 180 185 190
 Gly Glu Ala Ile Ile Thr Lys Asn Asp Phe Tyr Ser Pro Leu Val Pro
 195 200 205
 Arg Glu Asp Ser Gly Phe Thr Phe Gly Val Met Gly Ser Pro Ser Asp
 210 215 220
 Gly Lys Gln Ala Ser Val Leu Phe Lys Thr Ala Ser Asn Asp Thr Ile
 225 230 235 240
 Tyr Arg Leu Ser Ala Asp Thr Ile Gln Pro Val Leu Val Ala Gly Leu
 245 250 255
 Ser Asn Ser Asp Glu Glu Val Ile Arg Gly Leu Asn Ile Arg Asp Ile
 260 265 270
 Lys Arg Phe Pro Ala Asn Gly Asp Ile Phe Val Ser Asp Ile Phe Glu
 275 280 285
 Thr Pro Arg Arg Phe Tyr Leu Arg Met Met Leu Asn Glu Lys Tyr Tyr
 290 295 300

Val	Ala	Ser	Val	Asp	Lys	His	Ser	Gly	Glu	Thr	Val	Val	Glu	Gln	Cys
305					310					315					320
Asp	Ile	Pro	Glu	Thr	Ser	Ala	Tyr	Asn	Leu	Ala	Asp	Ile	Asn	Met	Gln
				325					330					335	
Leu	Gly	Met	Val	Gly	Ser	Lys	Gly	His	Asn	Arg	Phe	Pro	Val	Trp	Gly
			340					345					350		
Arg	Val	Leu	Gly	Asn	Asn	Leu	Val	Gln	Val	Val	Thr	Pro	Tyr	Glu	Ile
		355					360					365			
Glu	Thr	Phe	Lys	Glu	Gln	Thr	Gln	Ile	Thr	Val	Pro	Gln	Glu	Leu	Gln
	370					375					380				
Lys	Arg	Asn	Ala	Asn	Glu	Asn	Pro	Ile	Phe	Ile	Ile	Tyr	Lys	Ile	Lys
385					390					395					400

<210> 9031

<211> 350

<212> PRT

<213> B.fragilis

<400> 9031

Asn	Ala	Val	Asn	His	Met	Lys	Lys	Leu	Ile	Asp	Lys	Leu	Arg	Glu	Glu
1			5					10						15	
Arg	Thr	Leu	Thr	Ser	Glu	Glu	Phe	Ala	His	Leu	Leu	Ser	His	Tyr	Asp
		20					25						30		
Asp	Glu	Ala	Leu	Ala	Tyr	Ile	Asn	Gln	Gln	Ala	Arg	Glu	Val	Ala	Thr
	35					40					45				
Ala	His	Phe	Gly	Gln	Gly	Val	Tyr	Ile	Arg	Gly	Leu	Ile	Glu	Ile	Ser
	50				55						60				
Asn	Tyr	Cys	Arg	Asn	Asn	Cys	Asn	Tyr	Cys	Gly	Ile	Arg	Lys	Asp	Asn
65				70					75					80	
Trp	Arg	Ala	Asp	Arg	Tyr	Arg	Leu	Ser	Lys	Glu	Met	Ile	Trp	Asp	Cys
			85						90					95	
Cys	Glu	His	Gly	Tyr	Lys	Leu	Gly	Phe	Arg	Ser	Phe	Val	Leu	Gln	Gly
		100					105					110			
Gly	Glu	Asp	Pro	Lys	Arg	Ser	Asp	Asn	Asp	Met	Glu	Glu	Ile	Ile	Ala
		115					120					125			
Glu	Ile	Arg	Arg	Arg	Tyr	Pro	Glu	Cys	Ala	Ile	Thr	Leu	Ser	Ile	Gly
	130					135					140				
Glu	Lys	Pro	Ala	Lys	Ala	Tyr	Glu	Arg	Tyr	Phe	Met	Lys	Gly	Ala	Asp
145				150					155					160	
Arg	Tyr	Leu	Leu	Arg	His	Glu	Thr	Phe	Asn	Arg	Gly	His	Tyr	Tyr	Cys
			165						170					175	
Leu	His	Pro	Tyr	Glu	Met	Ser	Asn	Glu	Arg	Arg	Ile	Lys	Cys	Leu	Gln
		180						185					190		
Glu	Leu	Lys	Arg	Ile	Gly	Phe	Gln	Thr	Gly	Thr	Gly	Ile	Met	Val	Gly
		195					200					205			
Thr	Pro	Arg	Gln	Arg	Val	Glu	Phe	Leu	Ile	Glu	Asp	Ile	Arg	Phe	Ile
	210					215					220				
Glu	Asn	Phe	Gln	Pro	Glu	Met	Ile	Gly	Ile	Gly	Pro	Phe	Ile	Pro	His
225				230					235					240	
Gln	Arg	Thr	Pro	Phe	Cys	Asp	Glu	Lys	Ala	Gly	Ser	Val	Glu	Leu	Thr
			245						250					255	
Leu	Leu	Leu	Leu	Ser	Ile	Phe	Arg	Leu	Met	His	Pro	Lys	Ala	Leu	Ile
		260						265					270		
Pro	Ser	Thr	Thr	Ala	Leu	Ala	Ser	Leu	Ala	Pro	Asp	Gly	Arg	Ile	Arg
		275					280					285			
Gly	Ile	Leu	Ala	Gly	Ala	Asn	Val	Val	Met	Pro	Asn	Leu	Ser	Pro	Ile
	290					295					300				
Ile	Val	Arg	Asn	Lys	Tyr	Asn	Leu	Tyr	Asp	Gln	Lys	Val	Ala	Phe	Gly
305					310					315					320

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Ala Glu Ala Ala Glu Gly Leu Ala Leu Leu Glu Lys Gln Leu Thr Ala
 325 330 335
 Val Gly Tyr His Ile Asp Tyr Ser Arg Gly Asp Tyr Asn Asn
 340 345 350

<210> 9032
 <211> 63
 <212> PRT
 <213> B.fragilis

<400> 9032
 Leu Ile Pro Lys Thr Ser Lys His Lys Ala Ala Thr Pro Ala Ile Pro
 1 5 10 15
 Ile Leu Thr Ser Phe Val Met Ser Phe Met Phe Cys Tyr Leu Val Phe
 20 25 30
 Leu Phe Ile Ser Ser Phe Leu Lys Ile Gly Tyr Ser Leu Val Asp Ile
 35 40 45
 His Leu Phe Ser Val Ala Glu Cys Asn Asp Glu Gly Ile Leu Lys
 50 55 60

<210> 9033
 <211> 349
 <212> PRT
 <213> B.fragilis

<400> 9033
 Asn Ala Pro Lys Arg Lys Met Asn Lys Ile Ser Val Val Ile Leu Asn
 1 5 10 15
 Trp Asn Gly Cys Glu Met Leu Arg Ser Phe Leu Pro Ser Val Leu Arg
 20 25 30
 Tyr Ser Glu Ala Glu Gly Val Glu Val Cys Val Ala Asp Asn Gly Ser
 35 40 45
 Thr Asp Gln Ser Val Glu Met Leu Arg Arg Glu Phe Pro Ser Val Arg
 50 55 60
 Arg Ile Leu Leu Asp Gly Asn His Gly Phe Ala Asp Gly Tyr Asn Leu
 65 70 75 80
 Ala Leu Arg Gln Val Glu Ala Glu Tyr Val Val Leu Leu Asn Ser Asp
 85 90 95
 Val Glu Val Thr Gly His Trp Leu Gln Pro Met Ala Ala Tyr Leu Asp
 100 105 110
 Ala His Pro Glu Val Ala Ala Cys Gln Pro Lys Ile Arg Ser Trp Arg
 115 120 125
 Gln Lys Glu Trp Phe Glu Tyr Ala Gly Ala Ala Gly Gly Phe Ile Asp
 130 135 140
 Arg Tyr Gly Tyr Pro Phe Cys Arg Gly Arg Val Met Gly Val Val Glu
 145 150 155 160
 Ala Asp Arg Gly Gln Tyr Asp Thr Val Leu Pro Ile Phe Trp Ala Thr
 165 170 175
 Gly Ala Ala Met Phe Ile Arg Leu Ala Asp Tyr Arg Glu Ala Gly Gly
 180 185 190
 Leu Asp Gly Arg Phe Phe Ala His Met Glu Glu Ile Asp Leu Cys Trp
 195 200 205
 Arg Leu Arg Ala Arg Gly Arg Gly Ile Val Cys Ile Pro Gln Ser Val
 210 215 220
 Val Tyr His Val Gly Gly Ala Thr Leu Lys Lys Glu Asn Pro His Lys
 225 230 235 240
 Thr Phe Leu Asn Phe Arg Asn Asn Leu Val Met Leu Tyr Lys Asn Leu
 245 250 255
 Pro Asp Arg Glu Leu Ala Gly Val Met Arg Val Arg Cys Trp Leu Asp

	260		265		270										
Tyr	Ile	Ala	Ala	Ala	Thr	Phe	Ala	Leu	Lys	Gly	Gln	Leu	Pro	Asn	Ala
	275		280		285										
Lys	Ala	Val	Val	Arg	Ala	Arg	Arg	Glu	Phe	Lys	Leu	Leu	Arg	Asp	Ser
	290		295		300										
Phe	Arg	Asp	Ala	Arg	Ala	Glu	Asn	Leu	Arg	Lys	Thr	Ser	Ser	His	Phe
305			310		315										320
Ile	Pro	Glu	Arg	Ile	Lys	Ser	Ser	Ile	Leu	Val	Gln	Phe	Tyr	Val	Lys
			325		330									335	
Gly	Arg	Lys	Phe	Ser	Gln	Leu	Ser	Asp	Leu	Lys	Gly				
	340		345												

<210> 9034
 <211> 76
 <212> PRT
 <213> B.fragilis

	<400>	9034													
Lys	Ala	Lys	Lys	Met	Lys	Lys	Leu	Val	Leu	Met	Phe	Val	Ala	Ile	Ala
1		5		10		15									
Ala	Val	Ser	Phe	Ala	Ser	Cys	Gly	Asn	Lys	Ala	Ala	Asp	Ala	Glu	Lys
	20		25		30										
Ala	Thr	Ala	Asp	Ser	Ile	Arg	Ile	Ala	Asp	Ser	Ile	Ala	Ala	Val	Glu
	35		40		45										
Ala	Ala	Ala	Ala	Glu	Ala	Ala	Gln	Ala	Ala	Asp	Thr	Ile	Ala	Ala	
	50		55		60										
Asp	Thr	Thr	Val	Val	Thr	Glu	Thr	Val	Val	Ala	Glu				
65			70		75										

<210> 9035
 <211> 146
 <212> PRT
 <213> B.fragilis

	<400>	9035													
Leu	Met	Lys	Lys	Leu	Leu	Arg	Pro	Thr	Thr	Phe	Ala	Leu	Leu	Thr	Met
1		5		10		15									
Ala	Leu	Cys	Phe	Thr	Ala	Cys	Glu	Asn	Gly	Asn	Asn	Ser	Tyr	Pro	Lys
	20		25		30										
Glu	Tyr	Leu	Gly	Phe	Glu	Lys	Lys	Ala	Gln	Asp	Phe	Ser	Tyr	Gln	Lys
	35		40		45										
Asn	Ala	Glu	Glu	Thr	Glu	Leu	Gln	Val	Lys	Ile	Val	Ala	Ala	Asp	Lys
	50		55		60										
Thr	Ser	Glu	Asp	Arg	Ile	Val	Phe	Ile	Glu	Ser	Pro	Ala	Arg	Pro	Thr
65			70		75										80
Lys	Pro	Gly	Ser	Ser	Ser	Ala	Pro	Phe	Tyr	Lys	Ile	Lys	Asp	Asn	Lys
			85		90									95	
Ile	Thr	Ile	Lys	Gly	Gly	Ser	Lys	Ser	Ala	Lys	Ala	Thr	Ile	Leu	Val
	100		105		110										
Tyr	Pro	Arg	Lys	Val	Gly	Thr	Asn	Glu	Tyr	Ile	Gln	Leu	Ile	Cys	Arg
	115		120		125										
Pro	Gln	Asn	Gly	Lys	Ser	Glu	Thr	Thr	Lys	Met	Ser	Ile	Arg	Leu	Val
	130		135		140										
Lys	Lys														
145															

<210> 9036
 <211> 82
 <212> PRT

<213> B.fragilis

<400> 9036

Trp Gly Asn Leu Tyr Arg Thr Lys Arg Leu Thr Trp Ile His Lys Val
 1 5 10 15
 Ile Thr Leu Leu Ile Trp Leu Leu Leu Phe Leu Leu Gly Ile Asp Val
 20 25 30
 Glu Gly Ile Glu Ala Ile Val Lys Gly Leu His Ala Ile Gly Leu Glu
 35 40 45
 Ala Leu Ile Ile Thr Ala Ala Val Thr Gly Ser Thr Leu Ala Ala
 50 55 60
 Trp Gly Leu Trp Tyr Leu Leu His Thr Arg Tyr Gln Lys Lys Glu Ala
 65 70 75 80
 Lys Pro

<210> 9037

<211> 237

<212> PRT

<213> B.fragilis

<400> 9037

Lys Met Ile Asp Met Asp Glu Lys Leu Arg Ile Leu Leu Cys Glu Asp
 1 5 10 15
 Asp Glu Asn Leu Gly Met Leu Leu Arg Glu Tyr Leu Gln Ala Lys Gly
 20 25 30
 Tyr Ser Ala Glu Leu Tyr Pro Asp Gly Glu Ala Gly Phe Lys Ala Phe
 35 40 45
 Leu Lys Asn Lys Tyr Asp Leu Cys Val Phe Asp Val Met Met Pro Lys
 50 55 60
 Lys Asp Gly Phe Thr Leu Ala Gln Glu Val Arg Ala Ala Asn Ala Glu
 65 70 75 80
 Ile Pro Ile Ile Phe Leu Thr Ala Lys Thr Leu Lys Glu Asp Ile Leu
 85 90 95
 Glu Gly Phe Lys Ile Gly Ala Asp Asp Tyr Ile Thr Lys Pro Phe Ser
 100 105 110
 Met Glu Glu Leu Thr Phe Arg Ile Glu Ala Ile Leu Arg Arg Val Arg
 115 120 125
 Gly Lys Lys Asn Lys Glu Ser Asn Val Tyr Lys Ile Gly Lys Phe Thr
 130 135 140
 Phe Asp Thr Gln Lys Gln Ile Leu Ala Ile Gly Asp Lys Gln Thr Lys
 145 150 155 160
 Leu Thr Thr Lys Glu Ser Glu Leu Leu Gly Leu Leu Cys Ala His Ala
 165 170 175
 Asn Glu Ile Leu Gln Arg Asp Phe Ala Leu Lys Thr Ile Trp Ile Asp
 180 185 190
 Asp Asn Tyr Phe Asn Ala Arg Ser Met Asp Val Tyr Ile Thr Lys Leu
 195 200 205
 Arg Lys His Leu Lys Asp Asp Asp Ser Ile Glu Ile Ile Asn Ile His
 210 215 220
 Gly Lys Gly Tyr Lys Leu Ile Thr Pro Glu Pro Glu Ser
 225 230 235

<210> 9038

<211> 449

<212> PRT

<213> B.fragilis

<400> 9038

Leu Cys Ala Glu Tyr Ala Phe Leu Gln Ile Met Ile Asp Thr Thr Val
 1 5 10 15
 Phe Gln Asp Lys Thr Ala Val Tyr Tyr Thr Leu Gly Cys Lys Leu Asn
 20 25 30
 Phe Ser Glu Thr Ser Thr Ile Gly Lys Ile Leu Arg Glu Ala Gly Val
 35 40 45
 Arg Thr Ala Arg Lys Gly Glu Lys Ala Asp Leu Cys Ile Val Asn Thr
 50 55 60
 Cys Ser Val Thr Glu Met Ala Asp Lys Lys Cys Arg Gln Ala Ile His
 65 70 75 80
 Arg Leu Val Lys Gln His Pro Gly Ala Phe Val Val Val Thr Gly Cys
 85 90 95
 Tyr Ala Gln Leu Lys Pro Gly Asp Val Ala Lys Ile Glu Gly Val Asp
 100 105 110
 Val Val Leu Gly Ala Glu Gln Lys Lys Asp Leu Leu Gln Tyr Leu Gly
 115 120 125
 Asp Leu His Lys His Glu Gly Gly Glu Ala Tyr Thr Thr Ala Thr Lys
 130 135 140
 Asp Ile Arg Ser Phe Ala Pro Ser Cys Ser Arg Gly Asp Arg Thr Arg
 145 150 155 160
 Phe Phe Leu Lys Val Gln Asp Gly Cys Asp Tyr Phe Cys Ser Tyr Cys
 165 170 175
 Thr Ile Pro Phe Ala Arg Gly Arg Ser Arg Asn Gly Thr Ile Ala Ser
 180 185 190
 Leu Val Glu Gln Ala Arg Gln Ala Ala Glu Gly Gly Lys Glu Ile
 195 200 205
 Val Leu Thr Gly Val Asn Ile Gly Asp Phe Gly Lys Ser Thr Gly Glu
 210 215 220
 Thr Phe Phe Asp Leu Val Lys Ala Leu Asp Arg Val Glu Gly Ile Glu
 225 230 235 240
 Arg Tyr Arg Ile Ser Ser Ile Glu Pro Asn Leu Leu Thr Asp Glu Ile
 245 250 255
 Ile Glu Tyr Val Ser Arg Ser Arg Ser Phe Met Pro His Phe His Ile
 260 265 270
 Pro Leu Gln Ser Gly Ser Asp Glu Val Leu Gln Leu Met Arg Arg Arg
 275 280 285
 Tyr Gly Thr Glu Leu Phe Ala Ser Lys Ile Ala Lys Ile Lys Glu Val
 290 295 300
 Met Pro Asp Ala Phe Ile Gly Val Asp Val Ile Val Gly Thr Arg Gly
 305 310 315 320
 Glu Thr Ala Gly Tyr Phe Glu Lys Ala Tyr Glu Phe Ile His Gly Leu
 325 330 335
 Asp Val Thr Gln Leu His Val Phe Ser Tyr Ser Glu Arg Pro Gly Thr
 340 345 350
 Gln Ala Leu Lys Ile Asp His Val Val Thr Pro Glu Glu Lys His Gln
 355 360 365
 Arg Ser Gln Arg Leu Leu Ala Leu Ser Asp Glu Lys Thr Lys Ala Phe
 370 375 380
 Tyr Ala Arg His Ile Gly Gln Thr Met Pro Val Leu Met Glu Lys Pro
 385 390 395 400
 Lys Ala Gly Ala Pro Met His Gly Phe Thr Ala Asn Tyr Ile Arg Val
 405 410 415
 Glu Val Glu Ser Asp Ala Ala Leu Asp Asn Lys Val Val Asn Val Leu
 420 425 430
 Leu Gly Asp Phe Asn Glu Glu Gly Thr Ala Leu Lys Gly Thr Ile Thr
 435 440 445
 Gln

<210> 9039
 <211> 81
 <212> PRT
 <213> B.fragilis

<400> 9039

Thr	Gly	Gly	Asp	Arg	Gly	Gly	Arg	Ile	Gly	Glu	Glu	Lys	Lys	Glu	Lys
1				5					10					15	
Glu	Ile	Arg	Ala	Tyr	Ser	Val	Thr	Lys	Tyr	Ile	Ser	Leu	Gln	Ser	Ile
			20					25					30		
Gln	Arg	Ala	Arg	Ser	Phe	Asn	Tyr	Val	Glu	Ser	Leu	Tyr	Asn	Asn	Phe
			35				40					45			
Val	Leu	Ser	Val	Tyr	Phe	Val	Ala	Arg	Leu	Leu	Cys	Asp	Val	Ser	Val
	50					55					60				
Pro	Ala	Ala	Val	Phe	Pro	Pro	Ile	Phe	Val	Asn	Ser	Arg	Phe	Met	Tyr
65					70					75					80
Cys															

<210> 9040
 <211> 311
 <212> PRT
 <213> B.fragilis

<400> 9040

Asn	Leu	Asn	Asp	Ile	Thr	Met	Leu	Lys	Phe	Leu	Lys	Asn	Trp	Thr	Leu
1				5					10					15	
Pro	Ile	Ala	Met	Leu	Val	Gly	Ala	Val	Gly	Tyr	Pro	Val	Phe	Ile	Ser
			20					25					30		
Phe	Ser	Phe	Leu	Thr	Pro	Ile	Leu	Ile	Phe	Thr	Met	Leu	Leu	Leu	Thr
			35				40					45			
Phe	Cys	Lys	Val	Ser	Pro	Arg	Asp	Leu	Lys	Pro	Lys	Pro	Leu	His	Leu
	50					55				60					
Trp	Leu	Leu	Leu	Ile	Gln	Ile	Phe	Gly	Ser	Leu	Ile	Val	Tyr	Leu	Leu
65					70				75					80	
Leu	Tyr	Arg	Phe	Asn	Lys	Ile	Val	Ala	Glu	Gly	Ala	Met	Val	Cys	Val
				85					90					95	
Ile	Cys	Pro	Thr	Ala	Thr	Ala	Ala	Ala	Val	Ile	Thr	Ser	Lys	Leu	Gly
			100					105					110		
Gly	Ser	Ala	Ala	Ser	Leu	Thr	Thr	Tyr	Thr	Leu	Ile	Ala	Asn	Ile	Gly
			115				120					125			
Ala	Ala	Ile	Ala	Val	Pro	Ile	Leu	Phe	Pro	Leu	Ile	Glu	Ala	Asn	Pro
			130				135					140			
Gly	Ile	Ser	Phe	Ile	Asp	Ala	Phe	Leu	Val	Ile	Leu	Ser	Lys	Val	Phe
145					150					155					160
Pro	Leu	Leu	Ile	Cys	Pro	Phe	Leu	Ala	Ala	Trp	Phe	Leu	Gln	Arg	Phe
				165					170					175	
Ile	Pro	Lys	Val	His	Lys	Val	Leu	Leu	Gly	Tyr	His	Glu	Leu	Ala	Phe
			180					185					190		
Tyr	Leu	Trp	Gly	Ile	Ser	Leu	Ala	Ile	Val	Thr	Ala	Gln	Thr	Leu	Tyr
			195				200					205			
Ser	Leu	Ile	Asn	Asp	Pro	Ala	Asp	Gly	Leu	Thr	Glu	Ile	Met	Ile	Ala
	210					215					220				
Val	Val	Ala	Leu	Ile	Ala	Cys	Cys	Leu	Gln	Phe	Phe	Leu	Gly	Lys	Thr
225					230					235					240
Leu	Gly	Ser	Ile	Tyr	Asn	Asp	Arg	Ile	Ser	Gly	Gly	Gln	Ala	Leu	Gly
				245					250					255	
Gln	Lys	Asn	Thr	Ile	Leu	Ala	Ile	Trp	Met	Ala	His	Thr	Tyr	Leu	Asn
			260					265						270	

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Pro Leu Ser Ala Val Gly Pro Gly Ser Tyr Val Leu Trp Gln Asn Ile
 275 280 285
 Ile Asn Ser Trp Gln Leu Trp Lys Lys Arg Lys Lys Glu Ser Glu Lys
 290 295 300
 Cys Ser Asn Asn Val Ser Gly
 305 310

<210> 9041
 <211> 159
 <212> PRT
 <213> B.fragilis

<400> 9041
 Ser Asp Gly Leu Arg Met Leu Ser Phe Arg Ala Arg Pro Glu Gly Trp
 1 5 10 15
 Pro Glu Lys Arg Leu His Leu Pro Thr Asp Phe Ser Pro Val Ser Gln
 20 25 30
 Ile Tyr Gly Ile Cys Val Gln Met Asp Gly Leu Gly Ala Glu Ser Asp
 35 40 45
 Glu Phe Ala Phe Val Leu Ser Leu Ser Arg Cys Phe Cys Tyr Ile Leu
 50 55 60
 Ser Val Cys Phe Cys Gly Ala Thr Gly Glu Lys Lys Ala Pro Val Arg
 65 70 75 80
 Gly Ser Ala His Asn Asn Ile Cys Glu Glu Ala Lys His Ile Asp Ile
 85 90 95
 Leu Pro Glu Arg Ser Lys His Phe Pro Glu Met Leu Thr Ser Phe Ala
 100 105 110
 Gln Asn Val Cys Phe Phe Leu Gly Lys Cys Thr Val Phe Asn Pro Lys
 115 120 125
 Tyr Pro Leu Leu Trp Leu Glu Lys Pro Pro Ser Cys Thr Glu Lys Ser
 130 135 140
 Ala Ala Ala Phe Tyr Phe Ile Leu Ser Gly Arg Arg Arg Ser Gln
 145 150 155

<210> 9042
 <211> 633
 <212> PRT
 <213> B.fragilis

<400> 9042
 Thr Met Ala Asp Ser Lys Glu Lys Leu Phe Ser Asp Phe Ser Pro Val
 1 5 10 15
 Ser Thr Glu Lys Trp Met Glu Lys Val Thr Ala Asp Leu Lys Gly Ala
 20 25 30
 Asp Phe Glu Lys Lys Leu Val Trp Lys Thr Asn Glu Gly Phe Lys Val
 35 40 45
 Lys Pro Phe Tyr Arg Met Glu Asp Leu Glu Gly Leu Lys Thr Thr Asp
 50 55 60
 Ala Leu Pro Gly Glu Phe Pro Tyr Leu Arg Gly Thr Lys Lys Asn Ser
 65 70 75 80
 Asn Glu Trp Leu Val Arg Gln Glu Ile Lys Val Glu Ser Pro Lys Glu
 85 90 95
 Ala Asn Ala Lys Ala Leu Asp Ile Leu Asn Lys Gly Ile Asp Ser Leu
 100 105 110
 Ser Phe His Val Lys Ala Lys Glu Leu Asn Ala Glu Tyr Ile Glu Thr
 115 120 125
 Leu Leu Asn Asp Ile Cys Ala Glu Cys Val Glu Leu Asn Phe Ser Thr
 130 135 140
 Cys Gln Gly His Val Val Glu Leu Ala Asp Leu Leu Val Ala Tyr Phe

145		150		155		160
Gln Lys Lys Asp Tyr	Asp Leu Thr Lys	Leu Gln Gly Ser Ile Asn Tyr				
	165	170		175		
Asp Phe Phe Asn Lys Met Leu Ala Lys Gly Lys Glu Lys Gly Asn Met						
	180	185		190		
Val Gln Thr Ala Lys Ala Leu Ile Glu Ala Thr Ala Gln Leu Pro Lys						
	195	200		205		
Tyr Arg Val Leu Asn Val Asn Ala Leu Thr Leu Asn Asn Ala Gly Ala						
	210	215		220		
Tyr Ile Ser Gln Glu Leu Gly Tyr Ala Leu Ala Trp Gly Asn Glu Tyr						
225	230	235		240		
Met Asn Gln Leu Thr Glu Ala Glu Ile Pro Ala Ala Ile Val Ala Lys						
	245	250		255		
Lys Ile Lys Phe Asn Phe Gly Ile Ser Ser Asn Tyr Phe Leu Glu Ile						
	260	265		270		
Ala Lys Phe Arg Ala Ala Arg Met Leu Trp Ala Asn Ile Val Ala Ser						
	275	280		285		
Tyr Asn Pro Glu Cys Leu Arg Asp Cys Glu Asn Lys Gly Pro Asn Gly						
290	295	300				
Glu Cys Arg Cys Ala Ala Lys Met Lys Val His Ala Glu Thr Ser Thr						
305	310	315		320		
Phe Asn Leu Thr Leu Phe Asp Ala His Val Asn Leu Leu Arg Thr Gln						
	325	330		335		
Thr Glu Ala Met Ser Ala Ala Leu Gly Gly Val Asp Ser Met Thr Val						
	340	345		350		
Val Pro Phe Asp Lys Thr Tyr Glu Thr Pro Asp Glu Phe Ser Glu Arg						
	355	360		365		
Leu Ala Arg Asn Gln Gln Leu Leu Leu Lys Glu Glu Ser His Phe Asp						
370	375	380				
Lys Val Ile Asp Pro Ala Ala Gly Ser Tyr Tyr Ile Glu Asn Leu Thr						
385	390	395		400		
Val Ser Ile Ala Lys Gln Ala Trp Glu Ile Phe Leu Ala Val Glu Glu						
	405	410		415		
Glu Gly Gly Phe Tyr Ala Ala Leu Lys Ala Gly Thr Val Gln Ala Ala						
	420	425		430		
Val Asn Glu Ser Asn Lys Ala Arg His Lys Ala Val Ala Gln Arg Arg						
	435	440		445		
Glu Val Leu Leu Gly Thr Asn Gln Phe Pro Asn Phe Asn Glu Lys Ala						
450	455	460				
Gly Asp Lys Lys Pro Val Glu Ala Thr Cys Cys Cys Gly Gly His Asp						
465	470	475		480		
Thr Cys Glu Lys Asp Val Ala Thr Leu Asn Phe Asp Arg Ala Ala Ser						
	485	490		495		
Gln Phe Glu Ala Leu Arg Leu Glu Thr Glu Ala Ser Gly Lys Arg Pro						
	500	505		510		
Lys Ala Phe Met Leu Thr Ile Gly Asn Leu Ala Met Arg Gln Ala Arg						
	515	520		525		
Ala Gln Tyr Ser Cys Asn Phe Leu Ala Cys Ala Gly Tyr Glu Val Ile						
530	535	540				
Asp Asn Leu Gly Phe Glu Thr Val Glu Ala Gly Val Glu Ala Ala Met						
545	550	555		560		
Ala Ala Lys Ala Asp Ile Val Val Leu Cys Ser Ser Asp Asp Glu Tyr						
	565	570		575		
Ala Glu Tyr Ala Ile Pro Ala Phe Arg Ala Leu Asn Gly Arg Ala Met						
	580	585		590		
Phe Ile Ile Ala Gly Asn Pro Glu Cys Ala Glu Glu Leu Lys Ala Ala						
	595	600		605		
Gly Ile Glu Asn Phe Ile His Val Arg Val Asn Val Leu Glu Thr Leu						
610	615	620				

145 150 155 160
 165 170 175
 180 185 190
 195 200 205
 210 215 220
 225 230 235 240
 245 250 255
 260 265 270
 275 280 285
 290 295 300
 305 310 315 320
 325 330 335
 340 345 350
 355 360 365
 370 375 380
 385 390 395 400
 405 410 415
 420 425 430
 435 440 445
 450 455 460
 465 470 475 480
 485 490 495
 500 505 510
 515 520 525
 530 535 540
 545 550 555 560
 565 570 575
 580 585 590
 595 600 605
 610 615 620

Lys Glu Phe Asn Ala Lys Leu Leu Lys
625 630

<210> 9043
<211> 476
<212> PRT
<213> B.fragilis

<400> 9043

Ser	Thr	Lys	Asp	Met	Tyr	Lys	Val	Asp	Ser	Pro	Asp	Ala	Val	Asp	Phe
1				5					10					15	
Ile	Asn	His	Gln	Glu	Ile	Ile	Glu	Thr	Leu	Glu	Tyr	Ala	Arg	Ala	His
			20					25					30		
Arg	Asn	Asp	Arg	Glu	Leu	Ile	Arg	Asn	Leu	Ile	Glu	Lys	Ala	Arg	Leu
		35					40					45			
Cys	Lys	Gly	Leu	Thr	His	Arg	Glu	Ala	Ala	Ile	Leu	Leu	Glu	Cys	Ala
	50					55					60				
Glu	Glu	Asp	Leu	Thr	Lys	Glu	Ile	Phe	His	Leu	Ala	Lys	Glu	Ile	Lys
65					70				75					80	
Gln	Lys	Phe	Tyr	Gly	Asn	Arg	Ile	Val	Met	Phe	Ala	Pro	Leu	Tyr	Leu
				85					90					95	
Ser	Asn	Tyr	Cys	Val	Asn	Gly	Cys	Val	Tyr	Cys	Pro	Tyr	His	Leu	Lys
			100					105					110		
Asn	Lys	Thr	Ile	Ile	Arg	Lys	Lys	Leu	Thr	Gln	Glu	Glu	Ile	Cys	Arg
		115					120					125			
Glu	Val	Ile	Ala	Leu	Gln	Asp	Met	Gly	His	Lys	Arg	Leu	Ala	Leu	Glu
	130					135					140				
Ala	Gly	Glu	Asp	Pro	Val	Arg	Asn	Ser	Ile	Asp	Tyr	Ile	Leu	Glu	Ser
145					150					155				160	
Ile	Arg	Thr	Ile	Tyr	Ser	Ile	His	His	Lys	Asn	Gly	Ala	Ile	Arg	Arg
				165					170					175	
Val	Asn	Val	Asn	Ile	Ala	Ala	Thr	Thr	Val	Glu	Asn	Tyr	Arg	Lys	Leu
			180					185					190		
Lys	Asp	Ala	Gly	Ile	Gly	Thr	Tyr	Ile	Leu	Phe	Gln	Glu	Thr	Tyr	His
	195					200						205			
Lys	Glu	Asn	Tyr	Glu	Gln	Leu	His	Pro	Thr	Gly	Pro	Lys	Ser	Asn	Tyr
	210					215					220				
Ala	Tyr	His	Thr	Glu	Ala	Met	Asp	Arg	Ala	Met	Gln	Gly	Gly	Ile	Asp
225					230					235				240	
Asp	Val	Gly	Met	Gly	Val	Leu	Phe	Gly	Leu	Asn	Thr	Tyr	Arg	Tyr	Asp
			245					250						255	
Phe	Val	Gly	Leu	Leu	Met	His	Ala	Glu	His	Leu	Glu	Ala	Val	Tyr	Gly
		260						265					270		
Val	Gly	Pro	His	Thr	Ile	Ser	Val	Pro	Arg	Ile	Cys	Ser	Ala	Asp	Asp
		275					280					285			
Ile	Asn	Ala	Glu	Asp	Phe	Glu	Asn	Ala	Ile	Ser	Asp	Glu	Ile	Phe	Gln
	290					295					300				
Lys	Ile	Val	Ala	Val	Ile	Arg	Ile	Ser	Val	Pro	Tyr	Thr	Gly	Met	Ile
305					310					315				320	
Ile	Ser	Thr	Arg	Glu	Ser	Gln	Lys	Thr	Arg	Glu	Lys	Val	Leu	Asp	Leu
			325						330					335	
Gly	Ile	Ser	Gln	Ile	Ser	Gly	Gly	Ser	Arg	Thr	Ser	Val	Gly	Gly	Tyr
		340						345					350		
Ala	Glu	Ala	Glu	Thr	Pro	Glu	Glu	Asn	Ser	Ala	Gln	Phe	Asp	Val	Ser
		355					360					365			
Asp	Thr	Arg	Thr	Leu	Asp	Glu	Val	Val	Asn	Trp	Leu	Leu	Lys	Leu	Gly
	370					375					380				
Tyr	Ile	Pro	Ser	Phe	Cys	Thr	Ala	Cys	Tyr	Arg	Ala	Gly	Arg	Thr	Gly
385					390					395					400

Asp Gln Phe Met Ser Leu Val Lys Ser Gly Gln Ile Ala Asn Cys Cys
 405 410 415
 Ser Pro Asn Ala Leu Ile Thr Leu Gln Glu Tyr Leu Glu Asp Tyr Ala
 420 425 430
 Ser Glu Glu Thr Lys Ala Arg Gly Val Ala Met Ile Lys Gln Glu Met
 435 440 445
 Gln His Ile Pro Asn Pro Lys Ile Arg Glu Arg Ala Leu Glu Asn Leu
 450 455 460
 Lys Gln Ile Ala Ala Gly Glu Arg Asp Phe Arg Phe
 465 470 475

<210> 9044

<211> 449

<212> PRT

<213> B.fragilis

<400> 9044

Ile Lys Lys Asp Met Ile Ser Leu Asn Ile Glu Lys Thr Phe Gly Phe
 1 5 10 15
 Ile Ser Lys Glu Ser Val Ser Ala Tyr Glu Ala Gln Val Lys Ala Ala
 20 25 30
 Gln Glu Ala Leu Glu Asn Gly Thr Gly Lys Gly Asn Asp Phe Leu Gly
 35 40 45
 Trp Leu His Leu Pro Ser Ser Ile Ser Lys Glu His Leu Ala Asp Leu
 50 55 60
 Lys Ala Thr Ala Gln Val Leu Arg Asp Asn Cys Glu Val Val Ile Val
 65 70 75 80
 Ala Gly Ile Gly Gly Ser Tyr Leu Gly Ala Arg Ala Val Ile Glu Ala
 85 90 95
 Leu Ser Asn Ser Phe Thr Trp Leu Gln Glu Lys Lys Thr Ala Pro Val
 100 105 110
 Met Ile Tyr Ala Gly His Asn Ile Gly Glu Asp Tyr Leu Tyr Glu Leu
 115 120 125
 Thr Glu Phe Leu Lys Asp Lys Lys Phe Gly Val Ile Asn Ile Ser Lys
 130 135 140
 Ser Gly Thr Thr Thr Glu Thr Ala Leu Ala Phe Arg Leu Leu Lys Lys
 145 150 155 160
 Gln Cys Glu Asp Gln Arg Gly Lys Glu Met Ala Lys Lys Val Ile Val
 165 170 175
 Ala Val Thr Asp Ala Lys Lys Gly Ala Ala Arg Val Thr Ala Asp Lys
 180 185 190
 Glu Gly Tyr Lys Ser Phe Ile Ile Pro Asp Asn Val Gly Gly Arg Phe
 195 200 205
 Ser Val Leu Thr Pro Val Gly Leu Leu Pro Ile Ala Val Ala Gly Phe
 210 215 220
 Asp Ile Glu Gln Leu Val Asn Gly Ala Ala Asp Met Glu Lys Ala Cys
 225 230 235 240
 Gly Ala Asp Val Pro Phe Ala Glu Asn Pro Ala Ala Ile Tyr Ala Ala
 245 250 255
 Thr Arg Asn Glu Leu Tyr Lys Asn Gly Lys Lys Ile Glu Ile Leu Val
 260 265 270
 Asn Phe Cys Pro Lys Leu His Tyr Val Ser Glu Trp Trp Lys Gln Leu
 275 280 285
 Tyr Gly Glu Ser Glu Gly Lys Asp Asn Lys Gly Ile Phe Pro Ala Ala
 290 295 300
 Val Asp Phe Ser Thr Asp Leu His Ser Met Gly Gln Trp Ile Gln Glu
 305 310 315 320
 Gly Glu Arg Thr Ile Phe Glu Thr Val Ile Ser Val Asp Lys Val Asn
 325 330 335

5084
 B.fragilis
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 PRT
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 9044
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His Lys Leu Glu Val Pro Ser Asp Glu Ala Asn Leu Asp Gly Leu Asn
 340 345 350
 Phe Leu Ala Gly Lys Arg Val Asp Glu Val Asn Lys Met Ala Glu Leu
 355 360 365
 Gly Thr Gln Leu Ala His Val Asp Gly Gly Val Pro Asn Met Arg Ile
 370 375 380
 Val Ile Pro Glu Leu Ser Glu Phe Ser Ile Gly Gln Leu Leu Tyr Phe
 385 390 395 400
 Phe Glu Lys Ala Cys Gly Ile Ser Gly Tyr Leu Leu Gly Val Asn Pro
 405 410 415
 Phe Asn Gln Pro Gly Val Glu Ala Tyr Lys Lys Asn Met Phe Ala Leu
 420 425 430
 Leu Asn Lys Pro Gly Tyr Glu Glu Glu Ser Lys Ala Ile Gln Ala Arg
 435 440 445
 Leu

<210> 9045
 <211> 60
 <212> PRT
 <213> B.fragilis

<400> 9045

Thr Gly Ser Glu Thr Ile Glu Met Arg Thr Arg Gln Leu Ile Asp Thr
 1 5 10 15
 Asp Met Pro Met Cys Met Asn Asp Thr Glu Asn Leu Thr Ala Val Gln
 20 25 30
 Thr Asp Met Leu Arg Val Val Ala Asn Gly Glu Tyr Arg Phe Asn Ser
 35 40 45
 Ile Pro Val Val Arg Lys Tyr Glu Leu Gly Ser Ala
 50 55 60

<210> 9046
 <211> 442
 <212> PRT
 <213> B.fragilis

<400> 9046

Gly Ser Ala Leu Tyr His Leu Phe Ser Leu Phe Cys Leu Gln Phe Thr
 1 5 10 15
 Ile Tyr Asn Leu Gln Ile Lys Ala Asn Ile Thr Thr Phe Val Val Ala
 20 25 30
 Lys Lys Glu Met Met Lys Glu Asn Pro Lys His Ile Arg Ile Ser Glu
 35 40 45
 Tyr Asn Tyr Pro Leu Pro Asp Glu Arg Ile Ala Lys Phe Pro Leu Pro
 50 55 60
 Val Arg Asp Gln Ser Lys Leu Leu Ile Tyr Arg His Gly Glu Val Ser
 65 70 75 80
 Glu Asp Val Phe Thr Ser Leu Pro Glu Tyr Leu Pro Ala Gly Ser Leu
 85 90 95
 Met Ile Phe Asn Asn Thr Lys Val Ile Gln Ala Arg Leu His Phe Arg
 100 105 110
 Lys Glu Thr Gly Ala Leu Ile Glu Val Phe Cys Leu Glu Pro Ile Gln
 115 120 125
 Pro Asn Asp Tyr Val Leu Asn Phe Gln Gln Thr Glu His Ala Ala Trp
 130 135 140
 Leu Cys Met Val Gly Asn Leu Lys Lys Trp Lys Asp Gly Pro Leu Cys
 145 150 155 160
 Arg Glu Met Thr Val Lys Gly Phe Pro Ile Thr Leu Thr Ala Thr Arg

165 170 175
 Gly Glu Cys Arg Gly Thr Ser His Trp Ile Asp Phe Arg Trp Asp Asn
 180 185 190
 Pro Glu Val Thr Phe Ala Asp Ile Leu Glu Val Phe Gly Glu Leu Pro
 195 200 205
 Ile Pro Pro Tyr Leu Asn Arg Asp Thr Glu Glu Ser Asp Lys Glu Thr
 210 215 220
 Tyr Gln Thr Val Tyr Ser Lys Ile Lys Gly Ser Val Ala Ala Pro Thr
 225 230 235 240
 Ala Gly Leu His Phe Thr Pro Arg Val Leu Asp Ala Leu Thr Glu Lys
 245 250 255
 Gly Ile Asp Leu Glu Glu Leu Thr Leu His Val Gly Ala Gly Thr Phe
 260 265 270
 Lys Pro Val Lys Ser Glu Glu Ile Glu Gly His Glu Met His Thr Glu
 275 280 285
 Tyr Ile Ser Val Ser Arg Ser Ile Ile Lys Lys Leu Ile Asp His Asp
 290 295 300
 Ala Cys Ala Ile Ala Val Gly Thr Thr Ser Val Arg Thr Leu Glu Ser
 305 310 315 320
 Leu Tyr His Ile Gly Val Thr Leu Ala Asn Asn Pro Glu Ala Thr Glu
 325 330 335
 Glu Gln Leu His Val Lys Gln Trp Gln Pro Tyr Glu Thr Glu Cys Asp
 340 345 350
 Val Arg Pro Val Val Ala Leu Gln Lys Ile Leu Gly Tyr Leu Asp Arg
 355 360 365
 His Gly Met Glu Ala Leu His Thr Ser Thr Gln Ile Ile Ala Pro
 370 375 380
 Gly Tyr Asp Tyr Lys Ile Val Lys Ala Met Val Thr Asn Phe His Gln
 385 390 395 400
 Pro Gln Ser Thr Leu Leu Leu Leu Val Ser Ala Phe Val Lys Gly Asn
 405 410 415
 Trp His Thr Ile Tyr Asp Tyr Ala Leu Gly His Asp Phe Arg Phe Leu
 420 425 430
 Ser Tyr Gly Asp Ser Ser Leu Leu Ile Pro
 435 440

<210> 9047

<211> 81

<212> PRT

<213> B.fragilis

<400> 9047

Tyr Arg Ala Cys Ser Leu Glu Ile Pro Met Lys Ile Tyr Lys Ala Ala
 1 5 10 15
 Ala Gln Ala Asp Lys His Ile Ala Ala Ala Leu Pro Val Lys Asn Gly
 20 25 30
 Arg Val Glu Leu Ile Ile Ile Leu Arg Ser Lys Val Leu Pro Leu Asn
 35 40 45
 Ile Ile Asp Thr Glu Val Phe Arg Lys Tyr Pro Pro Leu Asn Lys Thr
 50 55 60
 Asn Thr Leu Trp Phe Cys Tyr Leu Asn Ala Asp Asn Lys Thr Ile Leu
 65 70 75 80
 Ile

<210> 9048

<211> 591

<212> PRT

<213> B.fragilis

<400> 9048

Glu Lys Phe Arg Ile Phe Ala Ser Lys Ile Glu Leu Ile Ser Asn Glu
 1 5 10 15
 Met Asn Ile Leu Glu Leu Ser Glu Gln Glu Ile Ile Arg Arg Asn Ser
 20 25 30
 Leu Asn Glu Leu Arg Ala Met Gly Ile Glu Pro Tyr Pro Ala Ala Glu
 35 40 45
 Tyr Val Thr Asn Ala Phe Ser Thr Asp Ile Lys Ala Glu Phe Lys Asp
 50 55 60
 Asp Glu Thr Pro Arg Gln Val Ser Val Ala Gly Arg Met Met Ser Arg
 65 70 75 80
 Arg Ile Met Gly Lys Ala Ser Phe Ile Glu Leu Gln Asp Ser Lys Gly
 85 90 95
 Arg Ile Gln Val Tyr Ile Thr Arg Asp Asp Ile Cys Pro Gly Glu Asp
 100 105 110
 Lys Glu Met Tyr Asn Thr Val Phe Lys Arg Leu Leu Asp Leu Gly Asp
 115 120 125
 Phe Ile Gly Ile Glu Gly Phe Val Phe Arg Thr Gln Met Gly Glu Ile
 130 135 140
 Ser Ile His Ala Gln Lys Leu Thr Val Leu Ala Lys Ser Ile Lys Pro
 145 150 155 160
 Leu Pro Ile Val Lys Tyr Lys Asp Gly Val Thr Tyr Asp Ser Phe Glu
 165 170 175
 Asp Pro Glu Leu Arg Tyr Arg Gln Arg Tyr Val Asp Leu Ala Val Asn
 180 185 190
 Glu Gly Val Lys Asp Ile Phe Ile Lys Arg Ser Lys Val Tyr Ser Ser
 195 200 205
 Met Arg Glu Tyr Phe Asn Ser Lys Gly Tyr Met Glu Val Glu Thr Pro
 210 215 220
 Ile Leu Gln Ala Ile Ala Gly Gly Ala Ala Arg Pro Phe Met Thr
 225 230 235 240
 His His Asn Ala Leu Asp Ile Pro Leu Tyr Met Arg Ile Ala Ser Glu
 245 250 255
 Leu Tyr Leu Lys Arg Leu Ile Val Gly Gly Phe Glu Gly Val Tyr Glu
 260 265 270
 Ile Gly Lys Asn Phe Arg Asn Glu Gly Met Asp Arg Thr His Asn Pro
 275 280 285
 Glu Phe Thr Cys Met Glu Ile Tyr Val Ala Tyr Lys Asp Tyr Asn Trp
 290 295 300
 Met Met Glu Phe Thr Glu Lys Met Ile Glu Lys Ile Cys Leu Asp Val
 305 310 315 320
 Asn Gly Thr Thr Glu Val Lys Val Gly Asp Asn Ile Ile Asn Phe Lys
 325 330 335
 Ala Pro Tyr Lys Arg Val Thr Met Leu Gly Ala Ile Lys Glu His Thr
 340 345 350
 Gly Tyr Asp Leu Thr Gly Met Asn Glu Glu Gln Ile Arg Glu Val Cys
 355 360 365
 Lys Lys Leu Asn Met Glu Ile Asp Asp Thr Met Gly Lys Gly Lys Leu
 370 375 380
 Ile Asp Glu Ile Phe Gly Glu Phe Cys Glu Gly Thr Tyr Ile Gln Pro
 385 390 395 400
 Thr Phe Ile Thr Asp Tyr Pro Ile Glu Met Ser Pro Leu Thr Lys Lys
 405 410 415
 His Arg Asp Asn Pro Glu Leu Thr Glu Arg Phe Glu Leu Met Val Asn
 420 425 430
 Gly Lys Glu Leu Cys Asn Ala Tyr Ser Glu Leu Asn Asp Pro Ile Asp
 435 440 445
 Gln Leu Glu Arg Phe Glu Asp Gln Met Lys Leu Ser Glu Lys Gly Asp

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

450 455 460
 Asp Glu Ala Met Ile Ile Asp Lys Asp Phe Val Arg Ala Leu Glu Tyr
 465 470 475 480
 Gly Met Pro Pro Thr Ser Gly Met Gly Ile Gly Met Asp Arg Leu Thr
 485 490 495
 Met Leu Met Thr Gly Gln Ser Thr Ile Gln Glu Val Leu Phe Phe Pro
 500 505 510
 Gln Met Arg Pro Glu Lys Val Val Pro Lys Asp Ser Ala Ser Lys Phe
 515 520 525
 Met Glu Leu Gly Ile Ala Glu Glu Trp Val Pro Val Ile Gln Lys Ala
 530 535 540
 Gly Tyr Asn Gln Val Ala Asp Met Lys Glu Val Asn Pro Gln Lys Phe
 545 550 555 560
 His Gln Asp Ile Cys Gly Ile Asn Lys Lys Tyr Lys Leu Glu Leu Thr
 565 570 575
 Asn Pro Ser Val Asn Asp Val Ala Glu Trp Ile Gln Lys Ile Lys
 580 585 590

<210> 9049
 <211> 110
 <212> PRT
 <213> B.fragilis

<400> 9049
 His Arg Ile Arg Gln Ile Glu Leu Asn Leu Leu Leu Ile Asn Asp Ile
 1 5 10 15
 Tyr Leu Cys Lys Ser Val Tyr Ser Val Val Asn Thr Ser Leu Gly Thr
 20 25 30
 Pro Ser Asp Thr Arg Ile Ile Ile Gln Phe Arg Ser Ile Thr Gln Lys
 35 40 45
 Ile Asp Ile Met Ile Lys Leu Lys Leu Ser Ile Leu Val Trp Ala Ile
 50 55 60
 Gly Leu Ser Met Thr Ala Phe Ser Gln Thr Thr Ser Ser Leu Arg Ala
 65 70 75 80
 Lys Val Leu Thr Leu Asn Asp Tyr Pro Asp Ala Leu Arg Leu Trp Glu
 85 90 95
 Leu Tyr Asn Asp Ser Ala Ser Val Glu Gln Lys Asn Pro Ser
 100 105 110

<210> 9050
 <211> 183
 <212> PRT
 <213> B.fragilis

<400> 9050
 Arg Val His Arg Gly His Thr Lys Pro Ser Glu Val Leu Val His Ala
 1 5 10 15
 Gly His Glu Pro Phe Lys Met Ala Arg Lys Glu Ala Gly Ile Asp Arg
 20 25 30
 Thr Pro Asp Asn Thr Val Asn Lys Tyr Gln Phe Ser Ala Pro Phe Gln
 35 40 45
 Trp Asn Phe Leu Ser Thr Leu His Val Asn Leu Lys Phe Leu Ser Ala
 50 55 60
 Glu Phe Ile His Ile Gly His Gly His Ser Phe Ile Ile Gly Phe His
 65 70 75 80
 Tyr Gln Met His Leu Ala Glu Leu Ser Gly Thr Thr Arg Leu Leu Phe
 85 90 95
 Val Thr Ile Val Gly Thr Gly Gly Phe Cys Asp Gly Phe Thr Ile Arg
 100 105 110

Asp Leu Arg Phe Phe Lys Phe His Leu Lys Leu Phe Ile Val Leu Gln
 115 120 125
 Thr Pro Phe Gln Arg Thr Glu Val Glu Phe Ser Leu Ala Met His Asp
 130 135 140
 Gly Leu Phe Gln Phe Phe Arg Leu Phe Asp Asp Pro Ser Arg Ile Phe
 145 150 155 160
 Leu Thr His Thr Val Gln Asp Gly His His Leu Phe Arg Ile Gly Leu
 165 170 175
 Val His Arg Leu Asp Gly Ala
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<210> 9051
 <211> 567
 <212> PRT
 <213> B.fragilis

<400> 9051
 Phe Cys Thr Arg Leu His Lys Ile Ile Asn Tyr Tyr Ile Met Asp Trp
 1 5 10 15
 Leu Gln Asp Leu Leu Trp Asn Pro Asn Ser Val Ala His Ile Val Phe
 20 25 30
 Leu Tyr Ala Phe Val Val Ala Ala Gly Val Tyr Leu Gly Lys Ile Lys
 35 40 45
 Ile Phe Gly Val Ser Leu Gly Val Thr Phe Val Leu Phe Ala Gly Ile
 50 55 60
 Leu Met Gly His Phe Gly Phe Thr Gly Asp Thr His Ile Leu His Phe
 65 70 75 80
 Ile Arg Glu Phe Gly Leu Ile Leu Phe Val Phe Cys Ile Gly Leu Gln
 85 90 95
 Val Gly Pro Ser Phe Phe Ser Ser Phe Lys Lys Gly Gly Met Thr Leu
 100 105 110
 Asn Met Leu Ala Val Gly Ile Val Val Leu Asn Ile Ala Val Ala Met
 115 120 125
 Ala Leu Tyr Phe Ile Leu Gly Gly Arg Ile Glu Leu Pro Met Met Val
 130 135 140
 Gly Ile Leu Tyr Gly Ala Val Thr Asn Thr Pro Gly Leu Gly Ala Ala
 145 150 155 160
 Gln Glu Ala Leu Asn Gln Leu Ser Tyr Ser Gly Pro Gln Ile Ala Leu
 165 170 175
 Gly Tyr Ala Cys Ala Tyr Pro Leu Gly Val Val Gly Ile Ile Gly Ser
 180 185 190
 Ile Ile Ala Val Arg Tyr Ile Phe Arg Ile Asn Phe Ala Lys Glu Glu
 195 200 205
 Glu Asn Trp Asn Gln Glu Thr Asp Gly Thr His His Lys Pro His Leu
 210 215 220
 Met Ser Leu Glu Val His Asn Glu Ala Ile Tyr Gly Lys Thr Leu Gly
 225 230 235 240
 Thr Ile Ser Ser Phe Leu Gly Arg Pro Phe Val Cys Ser Arg Ile Arg
 245 250 255
 Lys Asn Gly His Val Ser Ile Pro Asn His Gly Thr Ile Leu Glu Gln
 260 265 270
 Asn Asp Gln Leu Phe Val Val Cys Ser Glu Glu Asp Ser Asp Ala Ile
 275 280 285
 Val Ala Phe Ile Gly Arg Glu Val Gln Val Asp Trp Glu Lys Gln Asp
 290 295 300
 Met Pro Met Val Ser Arg Arg Ile Leu Val Thr Lys Pro Glu Ile Asn
 305 310 315 320
 Gly Lys Lys Leu Gly Met Leu Asn Phe Arg Ser Met Tyr Asn Val Asn
 325 330 335

Ile Thr Arg Val Asn Arg Ser Gly Val Asp Leu Phe Ala Asn Pro Asn
 340 345 350
 Leu Ile Leu Gln Val Gly Asp Arg Val Met Val Val Gly Ser Glu Asp
 355 360 365
 Ala Val Glu Arg Val Ala Ser Val Leu Gly Asn Ser Leu Lys Arg Leu
 370 375 380
 Asn Glu Pro Asn Ile Ile Thr Leu Phe Val Gly Ile Phe Leu Gly Ile
 385 390 395 400
 Leu Cys Gly Ser Leu Pro Ile Ala Phe Pro Gly Met Pro Thr Pro Val
 405 410 415
 Lys Leu Gly Leu Ala Gly Gly Pro Leu Val Val Ala Ile Leu Ile Gly
 420 425 430
 Arg Phe Gly His Lys Leu His Leu Val Thr Tyr Thr Thr Gln Ser Ala
 435 440 445
 Asn Leu Met Ile Arg Glu Ile Gly Ile Val Leu Phe Leu Ala Ser Val
 450 455 460
 Gly Ile Glu Ala Gly Ala Asn Phe Val Asp Thr Val Ile His Gly Asp
 465 470 475 480
 Gly Leu Leu Tyr Val Gly Cys Gly Phe Leu Ile Thr Ile Ile Pro Leu
 485 490 495
 Leu Ile Ile Gly Val Ile Ala Arg Ser Tyr Tyr Lys Ile Asn Tyr Phe
 500 505 510
 Met Leu Met Gly Leu Ile Ala Gly Ser Asn Thr Asp Pro Pro Ala Leu
 515 520 525
 Ala Tyr Ser Asn Gln Ala Thr Gly Ser Asp Ala Pro Ala Val Gly Tyr
 530 535 540
 Ser Thr Val Tyr Pro Leu Ser Met Phe Leu Arg Ile Leu Ala Gly Gln
 545 550 555 560
 Met Ile Leu Leu Leu Met Met
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<210> 9052
 <211> 311
 <212> PRT
 <213> B.fragilis

<400> 9052
 Arg Gly Tyr Arg Thr Glu Arg Asn Tyr Asn Thr Ile Asn Met Lys Ser
 1 5 10 15
 Lys Leu Leu Tyr Leu Leu Thr Tyr Val Gly Met Trp Leu Leu Ala Val
 20 25 30
 Leu Pro Phe Pro Val Leu Tyr Ala Leu Ser Asp Phe Ile Tyr Phe Trp
 35 40 45
 Leu Tyr His Val Ile Gly Tyr Arg Arg Lys Val Val Arg Thr Asn Leu
 50 55 60
 Lys Asn Ser Phe Pro Glu Lys Ser Ala Ala Glu Leu Lys Ala Ile Glu
 65 70 75 80
 Arg Lys Phe Phe His Tyr Leu Cys Asp Tyr Met Leu Glu Asp Val Lys
 85 90 95
 Met Leu Arg Met Ser Glu Lys Glu Leu Cys Lys Arg Met Thr Tyr Glu
 100 105 110
 Asn Lys Glu Thr Tyr Leu Arg Met Ile Asp Glu Arg Gly Gly Ile Val
 115 120 125
 Leu Leu Ile Pro His Tyr Ala Asn Phe Glu Trp Ile Thr Gly Met Gly
 130 135 140
 Met Ile Met Arg Pro Gly Asp Val Pro Val Gln Val Tyr Lys Pro Leu
 145 150 155 160
 Lys Asp Val Tyr Leu Asp Gly Leu Phe Lys Tyr Ile Arg Ala Arg Phe
 165 170 175

Gly	Gly	Tyr	Asn	Val	Pro	Lys	His	Ser	Thr	Ala	Arg	Glu	Val	Ile	Lys
			180					185					190		
Leu	Lys	Arg	Ala	Gly	Lys	Lys	Met	Ala	Ile	Gly	Leu	Ile	Thr	Asp	Gln
		195					200					205			
Ser	Pro	Asn	Met	His	Glu	Ala	His	Tyr	Trp	Thr	Thr	Phe	Leu	Asn	Gln
	210					215					220				
Asp	Thr	Val	Phe	Met	Asp	Gly	Ala	Glu	Arg	Ile	Ala	Lys	Met	Met	Asp
225					230					235					240
Phe	Pro	Val	Phe	Tyr	Cys	Glu	Leu	Arg	Lys	Glu	Arg	Arg	Gly	Tyr	Cys
				245					250					255	
Arg	Val	Asp	Phe	Asp	Leu	Val	Thr	Asp	Arg	Pro	Lys	Glu	Thr	Ala	Asp
			260					265					270		
Gly	Glu	Ile	Thr	Glu	Ile	Phe	Ala	Arg	Arg	Leu	Glu	Gln	Thr	Ile	Arg
		275					280					285			
Lys	Glu	Pro	Ala	Tyr	Trp	Leu	Trp	Ser	His	Lys	Arg	Trp	Lys	Leu	Lys
	290					295					300				
Arg	Pro	Glu	Lys	Lys	Asn	Glu									
305						310									

<210> 9053

<211> 633

<212> PRT

<213> B.fragilis

<400> 9053

Leu	Ile	Asn	Arg	Lys	Met	Lys	Lys	Gln	Asn	Ser	Ile	Tyr	Thr	Leu	Leu
1				5					10					15	
Ile	Ala	Leu	Leu	Cys	Phe	Val	Ser	Ser	Cys	Asp	Tyr	Leu	Gly	Val	Ser
		20						25					30		
Asp	Gln	Leu	Ala	Gly	Gly	Leu	Gln	Asn	Thr	Glu	Gln	Val	Phe	Asp	Asn
		35					40					45			
Val	Ser	Tyr	Thr	Lys	Arg	Trp	Tyr	Ala	Asn	Val	Phe	Ala	Gly	Ile	Pro
	50					55					60				
Asp	Tyr	Ser	Gly	Ile	Asn	Ser	Val	Asn	Val	Gly	Ala	Phe	Lys	Asn	Pro
65					70					75					80
Trp	Thr	Gly	Met	Cys	Asp	Glu	Leu	Val	Val	Gly	Tyr	Gly	Asn	Ser	Ser
			85						90					95	
Lys	Tyr	Asn	Asn	Ser	Asp	Arg	Asn	Ala	Asn	Met	Gly	Phe	His	Arg	
		100						105					110		
Tyr	Gly	Asp	Cys	Tyr	Lys	Tyr	Ile	Arg	Gln	Ala	Asn	Ile	Phe	Leu	Gln
		115					120					125			
Lys	Ala	His	Pro	Ile	Met	Thr	Thr	Gly	Thr	Gln	Gly	Asp	Gln	Leu	Leu
	130					135					140				
Glu	Asp	Glu	Leu	Thr	Gln	Met	Lys	Ala	Asn	Val	Arg	Phe	Met	Arg	Ala
145					150					155					160
Phe	Tyr	His	Tyr	Leu	Leu	Phe	Glu	Gln	Tyr	Gly	Pro	Ile	Ile	Leu	Val
				165					170					175	
Lys	Asp	Lys	Ile	Tyr	Asn	Ala	Thr	Glu	Asp	Gln	Asp	Val	Pro	Arg	Asn
			180					185					190		
Thr	Val	Asp	Glu	Val	Ile	Glu	Tyr	Ile	Asp	Ser	Glu	Leu	Thr	Ala	Val
		195					200					205			
Ala	Ser	Glu	Leu	Thr	Gln	Glu	Pro	Ile	Phe	Glu	Asp	Lys	Asp	Tyr	Arg
	210					215					220				
Ala	Trp	Pro	Thr	Lys	Gly	Val	Ala	Leu	Ala	Val	Arg	Ala	Lys	Leu	Trp
225					230					235					240
Leu	Tyr	Ala	Ala	Ser	Pro	Leu	Leu	Asn	Gly	Gly	Tyr	Arg	Glu	Ala	Leu
				245					250					255	
Ser	Val	Thr	Asn	Pro	Asp	Gly	Thr	Arg	Leu	Phe	Pro	Asp	Tyr	Asp	Ala
			260					265					270		

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Gly Lys Trp Glu Lys Ala Leu Ala Ala Cys Lys Asp Phe Ile Asp Tyr
 275 280 285
 Ala Glu Ala Gly Arg Tyr Glu Leu Tyr Lys Glu Tyr Lys Asp Asp Asn
 290 295 300
 Gly Ala Val Ile Asp Pro Asp Lys Ser Val Tyr Asn Leu Phe Gln Lys
 305 310 315 320
 Tyr Thr His Glu Ile Ile Trp Ala Thr Ala Asn Asn Asp Trp Gly Gly
 325 330 335
 Met Asn Gly Asp Ala Phe Asp Arg Arg Ile Ala Pro Arg Cys Glu Lys
 340 345 350
 Asn Gly Leu Gly Ser Thr Gly Val Thr Gln Glu Leu Val Asp Ala Phe
 355 360 365
 Tyr Met Lys Asp Gly Phe Pro Val Ser Ala Thr Ala Tyr Leu Pro Gln
 370 375 380
 Ser Thr Leu Tyr Gln Glu Glu Gly Tyr Gly Thr Tyr Lys Asp Gln Asn
 385 390 395 400
 Asp Asn Phe Ser Lys Lys Tyr Thr Asn Val Thr Val Ser Asn Arg Tyr
 405 410 415
 Leu Asn Arg Glu Pro Arg Phe Tyr Asn Thr Val Phe Phe Asn Gly Arg
 420 425 430
 Gln Trp Pro Val Ser Cys Asn Gln Val Leu Phe Tyr Asn Gly Gly Asn
 435 440 445
 Ser Gly Val Gln Glu Gly Gln Ala Thr Leu Thr Gly Tyr Met Leu Phe
 450 455 460
 Lys Arg Phe Asn Arg Ser Val Ser Leu Thr Asn Pro Gly Val Ala Ser
 465 470 475 480
 Gln Phe Arg Pro Ser Ile Ile Phe Arg Leu Ala Asp Phe Tyr Leu Met
 485 490 495
 Tyr Ala Glu Ala Ala Asn Glu Val Asn Pro Asn Asp Ala Arg Val Leu
 500 505 510
 Lys Tyr Leu Asn Leu Val Arg Glu Arg Ala Gly Leu Pro Asp Ile Glu
 515 520 525
 Thr Leu Asn Pro Ala Ile Arg Gly Asn Gln Glu Leu Gln Arg Ala Ala
 530 535 540
 Ile Gln Arg Glu Arg Gln Ile Glu Leu Ala Thr Glu Gly Gln Arg Tyr
 545 550 555 560
 Phe Asp Val Arg Arg Trp Met Ile Ala Asp Lys Asn Gly Glu Gly Arg
 565 570 575
 Gln Asn Gly Tyr Val His Gly Met Asn Val Arg Gly Glu Ser Asn Asp
 580 585 590
 Lys Glu Asp Phe Asn Arg Ile Val Glu Ala Ser Gln Ile Val Phe Asn
 595 600 605
 Arg Lys Met Tyr Leu Tyr Pro Met Pro Asp Ser Glu Met Arg Lys Thr
 610 615 620
 Lys Asn Leu Val Gln Asn Pro Gly Trp
 625 630

<210> 9054

<211> 354

<212> PRT

<213> B.fragilis

<400> 9054

Ile Val Asn Arg Thr Met Lys Ile Gly Asp Lys Val Arg Phe Leu Ser
 1 5 10 15
 Glu Val Gly Gly Gly Ile Val Lys Gly Phe Arg Gly Lys Asp Ile Val
 20 25 30
 Leu Val Glu Asp Ala Asp Gly Phe Asp Ile Pro Met Gln Ile Arg Glu
 35 40 45

Cys Val Val Ile Asp Thr Asp Asp Tyr Asn Met Thr Arg Lys Ala Ala
 50 55 60
 Pro Ala Pro Lys Lys Pro Glu Glu Pro Val Lys Pro Val Lys Pro Glu
 65 70 75 80
 Ile Pro Val Val Arg Ser Ala Glu Val Arg Gly Gly Asp Val Leu Asn
 85 90 95
 Val Phe Leu Ala Tyr Val Pro Glu Asp Val Lys Ala Ile Ser Ser Thr
 100 105 110
 Ser Phe Glu Ala Tyr Leu Val Asn Asp Ser Asn Tyr Tyr Leu Tyr Tyr
 115 120 125
 Thr Tyr Gln Ser Ala Glu Gly Lys Ala Trp Lys Thr Arg Ser His Gly
 130 135 140
 Leu Val Glu Pro Asn Thr Lys Leu Leu Leu Glu Glu Phe Thr Lys Asp
 145 150 155 160
 Met Leu Asn Glu Met Glu His Val Ala Val Gln Phe Ile Ala Phe Lys
 165 170 175
 Asp Gly Arg Thr Ala Pro Leu Lys Pro Ala Val Cys Val Glu Leu Arg
 180 185 190
 Ile Asp Thr Val Lys Phe Tyr Lys Leu His Thr Phe Arg Glu Ser Asp
 195 200 205
 Phe Phe Glu Gln Pro Ala Leu Val Tyr Asp Ile Val Lys Asp Asp Val
 210 215 220
 Pro Thr Arg Gln Val Phe Val Ser Ala Glu Glu Leu Gln Ser Val Leu
 225 230 235 240
 Ile Gln Lys Lys Glu Val Asp Lys Pro Lys Ser Gln Pro Ile Val Lys
 245 250 255
 Arg Gly Gly Lys Asn Glu Ile Leu Glu Ile Asp Leu His Ile Asn Glu
 260 265 270
 Leu Leu Asp Asp Thr Arg Gly Met Gly Asn Ala Glu Ile Leu Asn Tyr
 275 280 285
 Gln Leu Asp Lys Phe Arg Glu Val Met Glu Lys Tyr Lys Ala Lys Arg
 290 295 300
 Glu Gln Lys Ile Val Phe Ile His Gly Lys Gly Asp Gly Val Leu Arg
 305 310 315 320
 Lys Ala Leu Ile Asp Glu Leu Lys Arg Lys Tyr Ser Asn Cys Arg Tyr
 325 330 335
 Gln Asp Ala Ser Phe Gln Glu Tyr Gly Phe Gly Ala Thr Met Val Thr
 340 345 350
 Ile Lys

<210> 9055

<211> 161

<212> PRT

<213> B.fragilis

<400> 9055

Cys Lys Arg Leu Ile Asn Lys Ile Ile Ile Met Asp Ile Ile Ser Leu
 1 5 10 15
 Arg Lys Ser Pro Gln Tyr Leu Glu Glu Ala Ile Ala Tyr Phe Gln Arg
 20 25 30
 Lys Trp Ala Asp Glu Asn Ser Arg Met Val Tyr Asp Asn Cys Phe Arg
 35 40 45
 Thr Cys Leu Glu Ser Glu Ser Pro Leu Pro Gln Trp Tyr Leu Leu Ile
 50 55 60
 Asn Gly Glu Gly Glu Ile Ile Gly Cys Ala Gly Leu Ala Thr Asn Asp
 65 70 75 80
 Phe Asn Ser Arg Met Asp Leu Tyr Pro Trp Leu Val Ala Leu Phe Ile
 85 90 95

Glu	Glu	Gln	Tyr	Arg	Gly	His	Asn	Tyr	Gly	Asn	Leu	Leu	Ile	Lys	Ala
			100					105					110		
Val	Glu	Glu	Asp	Thr	Arg	Arg	Leu	Gly	Phe	Gly	Asn	Leu	Tyr	Leu	Cys
			115				120					125			
Thr	Thr	His	Thr	Gly	Tyr	Tyr	Glu	His	Phe	Asn	Phe	Val	Tyr	Ile	Gly
			130				135				140				
Asp	Cys	Tyr	His	Pro	Trp	Gly	Glu	His	Thr	Arg	Val	Tyr	Gln	Lys	Glu
145					150					155					160
Ile															

<210> 9056

<211> 177

<212> PRT

<213> B.fragilis

<400> 9056

Asn	Met	Gln	Ser	Asp	Asn	Asn	Gln	Glu	Met	Phe	Pro	Ile	Val	Asp	Glu
1				5					10					15	
Gln	Gly	Thr	Ile	Thr	Gly	Ala	Ala	Thr	Arg	Gly	Glu	Cys	His	Ser	Gly
			20					25					30		
Ser	Lys	Leu	Leu	His	Pro	Val	Val	His	Leu	His	Val	Phe	Asn	Ser	Lys
		35					40					45			
Gly	Glu	Leu	Tyr	Leu	Gln	Lys	Arg	Pro	Glu	Trp	Lys	Asp	Ile	Gln	Pro
		50				55					60				
Gly	Lys	Trp	Asp	Thr	Ser	Val	Gly	Gly	His	Ile	Asp	Leu	Gly	Glu	Ser
65					70					75					80
Val	Glu	Ile	Ala	Leu	Lys	Arg	Glu	Val	Ala	Glu	Glu	Leu	Gly	Ile	Thr
				85					90					95	
Asp	Phe	Thr	Pro	Glu	Leu	Leu	Thr	Ser	Tyr	Val	Phe	Glu	Ser	Ala	Arg
			100					105					110		
Glu	Arg	Glu	Leu	Val	Phe	Val	His	Lys	Thr	Val	Tyr	Asp	Gly	Glu	Ile
			115				120					125			
His	Pro	Ser	Asp	Glu	Leu	Asp	Gly	Gly	Arg	Phe	Trp	Ser	Tyr	Glu	Glu
		130				135					140				
Ile	Lys	Thr	Asn	Leu	Gly	Lys	Gly	Val	Phe	Thr	Pro	Asn	Phe	Glu	Ser
145					150					155					160
Glu	Ile	Asp	Lys	Val	Glu	Ile	Phe	Ser	Ser	Thr	Ser	Pro	Lys	Glu	Ala
				165					170					175	
Val															

<210> 9057

<211> 191

<212> PRT

<213> B.fragilis

<400> 9057

Val	Phe	Met	Arg	Arg	Ser	Ile	Leu	Asp	Ile	Phe	Leu	Phe	Leu	Leu	Val
1				5					10					15	
Ile	Ile	Ser	Thr	Ala	Ala	Cys	Asn	Asn	Asp	Leu	Pro	Phe	Asp	Leu	Lys
			20					25					30		
Glu	Asn	Pro	Pro	Lys	Leu	Val	Met	Asn	Ala	Ile	Ile	Asn	Ala	Asp	Ser
		35					40					45			
Thr	Tyr	Asn	Thr	Leu	Phe	Leu	Asn	Leu	Thr	Gly	Arg	Asn	Gln	Ile	Gly
		50				55					60				
Gln	Ile	Lys	Gly	Ala	Thr	Val	Glu	Val	Arg	Ile	Asn	Gly	Ser	Leu	Ser
65					70					75					80
Glu	Thr	Leu	Arg	Pro	Asp	Pro	His	Ser	Ser	Asp	Lys	Gly	Arg	Phe	Tyr

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1981	1982	1983	1984	1985
1986	1987	1988	1989	1990
1991	1992	1993	1994	1995
1996	1997	1998	1999	2000
2001	2002	2003	2004	2005
2006	2007	2008	2009	2010
2011	2012	2013	2014	2015
2016	2017	2018	2019	2020
2021	2022	2023	2024	2025
2026	2027	2028	2029	2030
2031	2032	2033	2034	2035
2036	2037	2038	2039	2040
2041	2042	2043	2044	2045
2046	2047	2048	2049	2050
2051	2052	2053	2054	2055
2056	2057	2058	2059	2060
2061	2062	2063	2064	2065
2066	2067	2068	2069	2070
2071	2072	2073	2074	2075
2076	2077	2078	2079	2080
2081	2082	2083	2084	2085
2086	2087	2088	2089	2090
2091	2092	2093	2094	2095
2096	2097	2098	2099	2100
2101	2102	2103	2104	2105
2106	2107	2108	2109	2110
2111	2112	2113	2114	2115
2116	2117	2118	2119	2120
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2126	2127	2128	2129	2130
2131	2132	2133	2134	2135
2136	2137	2138	2139	2140
2141	2142	2143	2144	2145
2146	2147	2148	2149	2150
2151	2152	2153	2154	2155
2156	2157	2158	2159	2160
2161	2162	2163	2164	2165
2166	2167	2168	2169	2170
2171	2172	2173	2174	2175
2176	2177	2178	2179	2180
2181	2182	2183	2184	2185
2186	2187	2188	2189	2190
2191	2192	2193	2194	2195
2196	2197	2198	2199	2200
2201	2202	2203	2204	2205
2206	2207	2208	2209	2210
2211	2212	2213	2214	2215
2216	2217	2218	2219	2220
2221	2222	2223	2224	2225
2226	2227	2228	2229	2230
2231	2232	2233	2234	2235
2236	2237	2238	2239	2240
2241	2242	2243	2244	2245
2246	2247	2248	2249	2250
2251	2252	2253	2254	2255
2256	2257	2258	2259	2260
2261	2262	2263	2264	2265
2266	2267	2268	2269	2270
2271	2272	2273	2274	2275
2276	2277	2278	2279	2280
2281	2282	2283	2284	2285
2286	2287	2288	2289	2290
2291	2292	2293	2294	2295
2296	2297	2298	2299	2300
2301	2302	2303	2304	2305
2306	2307	2308	2309	2310
2311	2312	2313	2314	2315
2316	2317	2318	2319	2320
2321	2322	2323	2324	2325
2326	2327	2328	2329	2330
2331	2332	2333	2334	2335
2336	2337	2338	2339	2340
2341	2342	2343	2344	2345
2346	2347	2348	2349	2350
2351	2352	2353	2354	2355
2356	2357	2358	2359	2360
2361	2362	2363	2364	2365
2366	2367	2368	2369	2370
2371	2372	2373	2374	2375
2376	2377	2378	2379	2380
2381	2382	2383	2384	

<400> 9058

Leu	Asp	Met	Arg	Lys	Ser	Asn	Pro	Asp	Phe	His	His	Ile	Arg	Ser	Tyr
1				5					10					15	
Ile	Leu	Met	Cys	Val	Val	Ser	Leu	Thr	Phe	Ser	Thr	Ile	Tyr	Ala	Gln
			20					25					30		
Thr	Pro	Glu	Pro	Lys	Leu	Thr	Leu	Lys	Leu	Gln	Asn	Thr	Ser	Leu	Ser
		35					40					45			
Glu	Val	Ile	Arg	Gln	Ile	Glu	Gln	Asp	Thr	Gly	Phe	Ser	Phe	Ile	Tyr
	50					55					60				
Gly	Glu	Glu	Val	Lys	Leu	Asp	His	Lys	Val	Ser	Leu	Asn	Val	Gln	Lys
65				70						75				80	
Lys	Pro	Leu	Arg	Glu	Val	Leu	Asn	Leu	Leu	Phe	Ala	Asn	Lys	Pro	Ile
				85				90					95		
Ser	Tyr	Lys	Ile	Thr	Gly	Lys	His	Ile	Leu	Leu	Gln	Lys	Thr	Pro	Pro
			100					105					110		
Lys	Pro	Val	Ser	Arg	Lys	Phe	Thr	Val	Ser	Gly	Tyr	Val	Thr	Asp	Gly
		115					120					125			
Ala	Ser	Ala	Glu	Thr	Leu	Ile	Gly	Ala	Asn	Ile	Leu	Glu	Ser	Arg	His
		130				135					140				
His	Gln	Gly	Thr	Thr	Thr	Asn	Pro	Tyr	Gly	Phe	Tyr	Ser	Ile	Thr	Leu
145				150						155				160	
Pro	Glu	Gly	Glu	Ala	Arg	Leu	Ser	Phe	Ser	Tyr	Leu	Gly	Tyr	Thr	Gly
				165					170					175	
Gln	Gln	His	Val	Leu	Asn	Leu	Thr	Ala	Asp	Thr	Leu	Leu	Asn	Ile	Arg
			180					185					190		
Met	Lys	Asp	Asn	Asn	Met	Leu	Gln	Glu	Val	Val	Ile	Val	Ser	Asp	Lys
		195					200					205			
Ala	Glu	Ser	Gly	Val	Met	Ala	Thr	Gln	Met	Gly	Ala	Ser	Glu	Ile	Pro
		210				215					220				
Met	Thr	Gln	Ile	Lys	Asn	Thr	Pro	Ser	Ile	Leu	Gly	Glu	Ala	Asp	Val
225				230						235				240	
Met	Lys	Ala	Ile	Gln	Leu	Met	Pro	Gly	Val	Gln	Ala	Gly	Met	Glu	Gly
				245					250					255	
Ser	Ala	Gly	Leu	Tyr	Val	Arg	Gly	Gly	Gly	Pro	Asp	Gln	Asn	Leu	Ile
			260					265					270		
Leu	Leu	Asp	Gly	Val	Pro	Val	Tyr	Asn	Val	Asp	His	Leu	Leu	Gly	Phe
		275					280					285			
Phe	Ser	Val	Phe	Thr	Pro	Glu	Ala	Val	Lys	Lys	Val	Thr	Leu	Phe	Lys
		290				295					300				
Ser	Ser	Phe	Pro	Ala	Arg	Phe	Gly	Gly	Arg	Leu	Ser	Ser	Val	Ile	Asn

305		310		315		320
Val Arg Thr Asn Asp Gly Asp Met Lys Asn Tyr His Gly Val Val Ser						
	325			330		335
Val Gly Leu Leu Thr Ser Lys Ile Asn Phe Glu Gly Pro Ile Ile Lys						
	340			345		350
Asn Arg Thr Ser Phe Asn Ile Ser Ala Arg Arg Ser Tyr Ile Asp Leu						
	355			360		365
Leu Ala Lys Pro Phe Met Pro Lys Asp Glu Lys Tyr Ser Tyr Tyr Phe						
	370			375		380
Phe Asp Val Asn Ala Lys Ile Asn His Lys Phe Ser Asp Arg Ser Arg						
385		390		395		400
Leu Phe Leu Ser Ala Tyr Asn Gly Lys Asp His Phe Met Thr Lys Tyr						
	405			410		415
Asp Asp Thr Tyr Tyr Gly Asp Glu Asp Lys Tyr Arg Asp Gly Gly Lys						
	420			425		430
Met Asn Trp Gly Asn Thr Ile Val Ser Gly Arg Trp Asn Tyr Ile Phe						
	435			440		445
Asn Asn Lys Leu Phe Ser Asn Thr Thr Val Ala Phe Asn Asn Tyr Lys						
	450			455		460
Phe Asp Val Ser Thr Phe Thr Lys Asn Glu Ile His Thr Asn Asn Gln						
465		470		475		480
Ile Thr Trp Asn Arg Tyr Lys Ala Asp Tyr Lys Ser Gly Ile Arg Asp						
	485			490		495
Trp Ser Ala Gln Ile Asp Phe Asp Tyr Asn Pro Ile Pro Thr His His						
	500			505		510
Val Lys Phe Gly Val Gln Tyr Leu His His Ser Phe Arg Pro Glu Val						
	515			520		525
Ser Thr Ser Lys Ile Phe Asp Lys Thr Gly Glu Thr Ile Glu Arg Asp						
	530			535		540
Thr Thr Tyr Tyr Thr Thr Ser Asn Ser Glu Ile Leu Ala His Glu Ala						
545		550		555		560
Ser Ala Tyr Leu Glu Asp Asn Phe Asn Leu Ser Ser Arg Leu Arg Met						
	565			570		575
Asn Leu Gly Leu His Phe Ser Thr Phe Gln Val Gln Lys Lys Asn Tyr						
	580			585		590
Phe Ser Val Gln Pro Arg Ile Ser Ala Arg Tyr Gln Leu Ser Lys Asp						
	595			600		605
Val Val Leu Lys Ala Ser Tyr Thr Lys Met Ser Gln Tyr Val His Leu						
	610			615		620
Ile Ser Ser Met Pro Phe Ala Met Pro Thr Asp Leu Trp Val Pro Val						
625		630		635		640
Thr Ser Lys Ile Lys Pro Met Gln Ala His Gln Val Ser Leu Gly Gly						
	645			650		655
Tyr Tyr Thr Gly Ile Asp Gly Trp Glu Phe Ser Ile Glu Gly Tyr Tyr						
	660			665		670
Lys Gly Met Lys Asn Val Leu Glu Tyr Lys Asp Gly Val Ser Phe Leu						
	675			680		685
Gly Ser Ser Thr Gly Trp Glu Asp Lys Val Glu Met Gly His Gly Pro						
	690			695		700
Leu Tyr Gly Cys Arg Val His Gly Thr Glu Asn His Arg Lys Asp Asn						
705		710		715		720
Gly Met Ala Gly Ile Tyr Pro Gly						
	725					

<210> 9059

<211> 717

<212> PRT

<213> B.fragilis

<400> 9059

Ser Lys Met Arg Lys Asp Phe Lys Asn Leu Asp Ile Tyr Ala Ala Phe
 1 5 10 15
 Gln Pro Ala Asn Gly Ala Glu Trp Gln Lys Ala Asn Gly Ile Glu Ala
 20 25 30
 Asn Trp Lys Thr Pro Glu His Ile Cys Val Lys Pro Val Tyr Thr Lys
 35 40 45
 Glu Asp Leu Glu Gly Met Glu His Leu Asp Tyr Ala Ala Gly Leu Pro
 50 55 60
 Pro Tyr Leu Arg Gly Pro Tyr Ser Val Met Tyr Thr Leu Arg Pro Trp
 65 70 75 80
 Thr Ile Arg Gln Tyr Ala Gly Phe Ser Thr Ala Glu Glu Ser Asn Ala
 85 90 95
 Phe Tyr Arg Arg Asn Leu Ala Ser Gly Gln Lys Gly Leu Ser Val Ala
 100 105 110
 Phe Asp Leu Ala Thr His Arg Gly Tyr Asp Pro Asp His Glu Arg Val
 115 120 125
 Val Gly Asp Val Gly Lys Ala Gly Val Ser Ile Cys Ser Leu Glu Asn
 130 135 140
 Met Lys Val Leu Phe Asp Gly Ile Pro Leu Asn Lys Met Ser Val Ser
 145 150 155 160
 Met Thr Met Asn Gly Ala Val Leu Pro Ile Met Ala Phe Tyr Ile Asn
 165 170 175
 Ala Gly Leu Glu Gln Gly Ala Lys Leu Glu Glu Met Ala Gly Thr Ile
 180 185 190
 Gln Asn Asp Ile Leu Lys Glu Phe Met Val Arg Asn Thr Tyr Ile Tyr
 195 200 205
 Pro Pro Ala Phe Ser Met Lys Ile Ile Ser Asp Ile Phe Glu Tyr Thr
 210 215 220
 Ser Gln Lys Met Pro Lys Phe Asn Ser Ile Ser Ile Ser Gly Tyr His
 225 230 235 240
 Met Gln Glu Ala Gly Ala Thr Ala Asp Ile Glu Leu Ala Tyr Thr Leu
 245 250 255
 Ala Asp Gly Leu Glu Tyr Leu Arg Ala Gly Val Ala Ala Gly Ile Asp
 260 265 270
 Ile Asp Ala Phe Ala Pro Arg Leu Ser Phe Phe Trp Ala Ile Gly Thr
 275 280 285
 Asn His Phe Met Glu Ile Ala Lys Met Arg Ala Ala Arg Met Leu Trp
 290 295 300
 Ala Lys Ile Val Lys Gln Phe Asn Pro Lys Asn Pro Lys Ser Leu Ala
 305 310 315 320
 Leu Arg Thr His Ser Gln Thr Ser Gly Trp Ser Leu Thr Glu Gln Asp
 325 330 335
 Pro Phe Asn Asn Val Gly Arg Thr Cys Ile Glu Ala Met Ala Ala Ala
 340 345 350
 Leu Gly His Thr Gln Ser Leu His Thr Asn Ala Leu Asp Glu Ala Ile
 355 360 365
 Ala Leu Pro Thr Asp Phe Ser Ala Arg Ile Ala Arg Asn Thr Gln Ile
 370 375 380
 Tyr Ile Gln Glu Glu Thr Tyr Ile Cys Lys Asn Val Asp Pro Trp Gly
 385 390 395 400
 Gly Ser Tyr Tyr Val Glu Ser Leu Thr Asn Glu Leu Ala His Ser Ala
 405 410 415
 Trp Glu His Ile Gln Glu Ile Glu Lys Leu Gly Gly Met Ala Lys Ala
 420 425 430
 Ile Glu Thr Gly Ile Pro Lys Met Arg Ile Glu Glu Ala Ala Ala Arg
 435 440 445
 Ala Gln Ala Arg Ile Asp Ser Gly Ser Gln Thr Ile Val Gly Val Asn
 450 455 460

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100 101 102 103 104 105 106 107 108 109 110 111 112 113 114 115 116 117 118 119 120 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140 141 142 143 144 145 146 147 148 149 150 151 152 153 154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184 185 186 187 188 189 190 191 192 193 194 195 196 197 198 199 200 201 202 203 204 205 206 207 208 209 210 211 212 213 214 215 216 217 218 219 220 221 222 223 224 225 226 227 228 229 230 231 232 233 234 235 236 237 238 239 240 241 242 243 244 245 246 247 248 249 250 251 252 253 254 255 256 257 258 259 260 261 262 263 264 265 266 267 268 269 270 271 272 273 274 275 276 277 278 279 280 281 282 283 284 285 286 287 288 289 290 291 292 293 294 295 296 297 298 299 300 301 302 303 304 305 306 307 308 309 310 311 312 313 314 315 316 317 318 319 320 321 322 323 324 325 326 327 328 329 330 331 332 333 334 335 336 337 338 339 340 341 342 343 344 345 346 347 348 349 350 351 352 353 354 355 356 357 358 359 360 361 362 363 364 365 366 367 368 369 370 371 372 373 374 375 376 377 378 379 380 381 382 383 384 385 386 387 388 389 390 391 392 393 394 395 396 397 398 399 400 401 402 403 404 405 406 407 408 409 410 411 412 413 414 415 416 417 418 419 420 421 422 423 424 425 426 427 428 429 430 431 432 433 434 435 436 437 438 439 440 441 442 443 444 445 446 447 448 449 450 451 452 453 454 455 456 457 458 459 460

Lys Tyr Arg Leu Glu Lys Glu Asp Pro Ile Asp Ile Leu Glu Val Asp
 465 470 475 480
 Asn Thr Ala Val Arg Lys Glu Gln Ile Glu Asn Leu Lys Arg Leu Lys
 485 490 495
 Glu Gly Arg Asn Gln Ala Glu Val Asp Lys Ala Leu Ala Ala Ile Thr
 500 505 510
 Glu Cys Val Lys Thr Gly Lys Gly Asn Leu Leu Glu Leu Ala Val Glu
 515 520 525
 Ala Ala Arg Val Arg Ala Thr Leu Gly Glu Ile Ser Tyr Ala Cys Glu
 530 535 540
 Gln Ile Val Gly Arg Tyr Lys Ala Ile Ile Arg Thr Ile Ser Gly Val
 545 550 555 560
 Tyr Ser Ser Glu Ser Lys Gly Asp Ala Asp Phe Lys Arg Ala Cys Glu
 565 570 575
 Leu Thr Glu Lys Phe Ala Lys Lys Glu Gly Arg Gln Pro Arg Ile Met
 580 585 590
 Val Ala Lys Met Gly Gln Asp Gly His Asp Arg Gly Ala Lys Val Val
 595 600 605
 Ala Thr Gly Tyr Ala Asp Cys Gly Phe Asp Val Asp Met Gly Pro Leu
 610 615 620
 Phe Gln Thr Pro Ala Glu Ala Ala Arg Glu Ala Val Glu Asn Asp Val
 625 630 635 640
 His Val Val Gly Val Ser Ser Leu Ala Ala Gly His Lys Thr Leu Val
 645 650 655
 Pro Gln Ile Ile Glu Glu Leu Lys Lys Leu Gly Arg Glu Asp Ile Val
 660 665 670
 Val Ile Ala Gly Gly Val Ile Pro Ala Gln Asp Tyr Asp Phe Leu Tyr
 675 680 685
 Lys Ala Gly Val Ala Ala Ile Phe Gly Pro Gly Thr Pro Val Ala Lys
 690 695 700
 Ala Ala Cys Gln Ile Leu Glu Ile Leu Met Asp Glu Asp
 705 710 715

<210> 9060
 <211> 72
 <212> PRT
 <213> B.fragilis

<400> 9060
 Arg Arg Thr Gly Ser Arg Leu Phe Tyr Arg Ile Ser Ala Ile Asp Val
 1 5 10 15
 Ser Pro Tyr Pro Cys Gly Thr Asn Asp Ile Val Ala Asn Asp Val Ile
 20 25 30
 Thr Ile His Pro Asp Thr Ala Met Ala Ser Tyr His Val Phe Ile Tyr
 35 40 45
 Ile Val Ile Gly His Phe Tyr Met Val Thr Ala Ser Ile Thr Lys Pro
 50 55 60
 Val Ser Ser Pro Gln Ile Leu Leu
 65 70

<210> 9061
 <211> 201
 <212> PRT
 <213> B.fragilis

<400> 9061
 Thr Met Lys Gly Ser Leu Ile Ile Val Ser Phe Phe Ile Val Gly Thr
 1 5 10 15
 Leu Cys Gly Leu Phe Gln Leu Ile Pro Tyr Asp Phe Ser Gln Ser Lys

5	6	7	8	9	10
11	12	13	14	15	16
17	18	19	20	21	22
23	24	25	26	27	28
29	30	31	32	33	34
35	36	37	38	39	40
41	42	43	44	45	46
47	48	49	50	51	52
53	54	55	56	57	58
59	60	61	62	63	64
65	66	67	68	69	70
71	72	73	74	75	76
77	78	79	80	81	82
83	84	85	86	87	88
89	90	91	92	93	94
95	96	97	98	99	100

<400> 9062

Lys	Leu	Ile	Leu	Lys	Pro	Thr	Gln	Gln	Lys	Arg	Phe	Lys	Leu	Met	Arg
1				5					10					15	
Lys	Pro	Phe	Met	Leu	Ile	Ser	Val	Leu	Pro	Ile	Thr	Val	His	Ile	Ser
			20					25					30		
His	Asp	Thr	Asp	Thr	Gly	Ser	Asn	Arg	Ile	Gly	Gly	Ile	Pro	Glu	Lys
		35					40					45			
Tyr	Ala	Phe	Lys	Asn	Lys	Val	Leu	Arg	Ser	Ile	Cys	Phe	Val	Leu	Phe
	50				55					60					
Leu	Leu	Ser	Ile	Gly	Leu	Asn	Ser	Ala	Phe	Ala	Gln	Val	Arg	Asn	Ala
65				70					75					80	
Ala	Gly	Leu	Val	Val	Asp	Glu	Asn	Gly	Gln	Pro	Leu	Ile	Gly	Val	Gln
			85					90					95		
Ile	Lys	Leu	Glu	Gly	Thr	Thr	Thr	Gly	Val	Ile	Thr	Asp	Val	Asp	Gly
		100					105					110			
Asn	Phe	Ser	Ile	Asn	Ala	Lys	Lys	Gly	Asp	Ile	Leu	Leu	Phe	Ser	Tyr
		115				120					125				
Val	Gly	Tyr	Glu	Pro	Gln	Arg	Ile	Thr	Tyr	Lys	Gly	Glu	Lys	Ile	Leu
	130				135					140					
Ala	Ile	Lys	Met	Leu	Pro	Asn	Thr	Glu	Leu	Leu	Asp	Glu	Val	Val	Val
145				150					155					160	
Ile	Gly	Tyr	Gly	Lys	Gln	Lys	Lys	Asn	Ser	Val	Val	Ser	Ser	Ile	Asn
		165					170					175			
Ala	Ile	Gly	Pro	Lys	Glu	Leu	Ala	Val	Ser	Ser	Asn	Arg	Asn	Leu	Thr
	180					185					190				
Asn	Ser	Leu	Ala	Gly	Gln	Val	Pro	Gly	Leu	Ile	Ala	Val	Gln	Arg	Ser
	195				200					205					
Gly	Glu	Pro	Gly	Tyr	Asp	Asn	Ser	Glu	Phe	Trp	Ile	Arg	Gly	Val	Ser
	210				215				220						
Ser	Phe	Lys	Gly	Gly	Thr	Asn	Pro	Leu	Val	Leu	Val	Asp	Gly	Val	Pro

225 230 235 240
 Arg Asn Met Gln Asp Ile Glu Pro Asp Glu Ile Glu Ser Phe Thr Leu
 245 250 255
 Leu Lys Asp Ala Ala Ala Thr Ala Val Tyr Gly Ala Glu Gly Ala Asn
 260 265 270
 Gly Val Ile Leu Ile Thr Ser Lys Arg Gly Asn Ser Gln Lys Pro Lys
 275 280 285
 Ile Ser Leu Arg Ala Glu Ser Thr Leu Leu Thr Pro Thr Arg Leu Pro
 290 295 300
 Lys Phe Met Asn Ser Val Glu Thr Leu Asp Leu Tyr Asn Glu Ala Leu
 305 310 315 320
 Asn Asn Glu Gly Thr Ala Ser Ile Arg Thr Ala Glu Glu Ile Ala Met
 325 330 335
 Tyr Gly Pro Gly Ala Asp Arg Asp Leu Tyr Pro Asp Thr Asp Trp Leu
 340 345 350
 Arg Glu Met Leu Arg Glu His Thr Tyr Asn Met Arg Tyr Thr Leu Asn
 355 360 365
 Val Arg Gly Gly Ser Glu Arg Ala Arg Tyr Phe Val Ser Gly Ala Phe
 370 375 380
 Tyr Gln Glu Asn Gly Ile Phe Lys Glu Gly Lys Lys Asn Glu Tyr Asp
 385 390 395 400
 Asn Asn Ile Gly Leu Lys Arg Tyr Asn Leu Arg Ser Asn Ile Asp Phe
 405 410 415
 Asp Ala Thr Lys Thr Thr Leu Val Lys Val Asp Ile Ser Gly Gln Tyr
 420 425 430
 Leu Gln Thr Asn Tyr Pro Gly Thr Ser Thr Asn Thr Ile Phe Asn Ser
 435 440 445
 Met Cys Arg Thr Pro Ser Tyr Leu Met Pro Ala Glu Tyr Ser Asp Gly
 450 455 460
 Thr Ile Ala Gly His Pro Arg Pro Ser Gly Asn Arg Val Asn Pro Tyr
 465 470 475 480
 Asn Leu Leu Met Asn Ser Gly Tyr Ala Lys Glu Trp Arg Thr Ser Ile
 485 490 495
 Gln Ser Lys Leu Glu Val Asp Gln Lys Leu Asp Phe Ile Thr Lys Gly
 500 505 510
 Leu Asn Trp Lys Gly Leu Ile Ser Phe Asp Ala Asp Met Lys Tyr Ile
 515 520 525
 Ala Lys Arg Thr Lys Thr Pro Thr Gln Tyr Leu Ala Thr Gly Arg Asp
 530 535 540
 Glu Asn Gly Gly Leu Gln Phe Lys Lys Val Val Glu Gly Ser Asp Val
 545 550 555 560
 Leu Thr Glu Lys Leu Glu Asn Ser Ser Asn Lys Lys Ile Tyr Phe Glu
 565 570 575
 Thr Ser Phe Asn Tyr Asn Arg Thr Phe Ala Gln Lys His Asp Val Thr
 580 585 590
 Ala Met Val Leu Tyr Met Gln Lys Glu Thr Gln Tyr His Asn Asn Ala
 595 600 605
 Leu Pro Tyr Arg Lys Gln Gly Leu Val Gly Arg Ala Thr Tyr Gly Tyr
 610 615 620
 Asp Gly Arg Tyr Phe Ile Glu Gly Asn Phe Gly Tyr Thr Gly Ser Glu
 625 630 635 640
 Thr Phe Ala Lys Gly Tyr Arg Phe Gly Phe Phe Pro Ala Met Gly Leu
 645 650 655
 Ala Trp Tyr Val Ser Asn Glu Pro Phe Tyr Pro Glu Val Leu Lys Lys
 660 665 670
 Val Val Asn Lys Leu Lys Phe Arg Phe Ser Ile Gly Arg Thr Gly Asn
 675 680 685
 Asp Asp Thr Gly Gly Asp Arg Phe Leu Tyr Arg Gly Thr Met Lys Gln
 690 695 700

Asp	Asn	Gly	Gly	Tyr	Asp	Leu	Gly	Phe	Ser	Asp	Thr	Gly	Gly	Met	Gly
705					710					715					720
Gly	Ile	Gly	Asn	Gly	Ile	Thr	Glu	Ala	Arg	Phe	Glu	Ala	Pro	Tyr	Leu
			725						730					735	
Ser	Trp	Glu	Ile	Glu	Glu	Lys	Lys	Asn	Tyr	Gly	Ile	Asp	Leu	Gly	Leu
		740						745					750		
Phe	Asp	Asn	Arg	Ile	Asp	Leu	Gln	Val	Asp	Tyr	Phe	Asn	Asn	Lys	Arg
	755						760					765			
Lys	Ser	Ile	Leu	Leu	Gln	Arg	Asn	Thr	Val	Ser	Asn	Val	Thr	Gly	Phe
	770				775						780				
Gln	Gln	Met	Pro	Trp	Gln	Asn	Phe	Gly	Ile	Val	Lys	Asn	His	Gly	Val
785					790					795					800
Asp	Ala	Ser	Leu	Ile	Leu	Asn	Gln	Lys	Ile	Gly	Gln	Val	Asn	Leu	Ser
			805						810					815	
Ala	Arg	Gly	Asn	Phe	Thr	Phe	Ala	Arg	Asn	Glu	Ile	Ile	Glu	Tyr	Asp
			820					825					830		
Gln	Val	Pro	Gln	Val	Tyr	Pro	Trp	Leu	Glu	Lys	Arg	Gly	Thr	Arg	Leu
	835						840					845			
Asn	Ser	Asn	Lys	Leu	Tyr	Ile	Ala	Glu	Gly	Leu	Tyr	Thr	Tyr	Asp	Asp
	850					855					860				
Phe	Ile	Ile	Asn	Gly	Glu	Gly	Leu	Asn	Arg	Thr	Tyr	Glu	Leu	Lys	Pro
865					870					875					880
Gly	Val	Val	Ser	Gly	Leu	Ser	Ser	Gly	Val	Arg	Pro	Gly	Asp	Ile	Lys
				885					890					895	
Tyr	Lys	Asp	Leu	Asn	Gly	Asp	Gly	Lys	Ile	Gly	Leu	Arg	His	Val	Arg
			900					905					910		

<210> 9063

<211> 264

<212> PRT

<213> B.fragilis

<400> 9063

Tyr	Ile	Ile	Leu	Thr	Glu	Leu	Phe	Tyr	Lys	Lys	Leu	Val	Ile	Asn	Thr
1				5					10					15	
Thr	Tyr	Gln	Leu	Ile	Thr	Ser	Leu	Met	Asn	Thr	Met	Phe	Phe	Asn	Ala
		20						25					30		
Val	Ser	Cys	Phe	Phe	Val	Cys	Ala	Gly	Leu	Ile	Ile	Ala	Leu	Ile	Leu
	35						40					45			
Ala	Ile	Asn	Val	Ile	Phe	His	Arg	Gln	Ser	Met	Lys	Ile	Met	Asn	Ile
	50					55					60				
Val	Trp	Val	Leu	Thr	Gly	Leu	Trp	Gly	His	Tyr	Phe	Ala	Leu	Phe	Ala
65				70					75						80
Tyr	Tyr	Thr	Phe	Gly	Val	Arg	Lys	Asp	Asn	Met	Val	Ala	Thr	Val	Pro
			85						90					95	
Met	Glu	Asn	Met	Lys	Met	Asp	Met	Lys	Ile	Ser	Met	Glu	Met	Asp	Met
		100						105					110		
Ser	Glu	Val	Arg	Pro	Gln	Trp	Gln	Ser	Ile	Thr	Leu	Ser	Ala	Leu	His
		115					120					125			
Cys	Gly	Ala	Gly	Cys	Thr	Leu	Ala	Asp	Ile	Ile	Gly	Glu	Trp	Phe	Thr
	130					135					140				
Tyr	Trp	Val	Pro	Leu	Gln	Ile	Gly	Gly	Ser	Leu	Ile	Ala	Gly	Ser	Trp
145					150					155					160
Ala	Leu	Asp	Phe	Val	Leu	Ala	Leu	Ile	Leu	Gly	Val	Phe	Phe	Gln	Phe
			165						170					175	
Ile	Ala	Ile	Arg	Glu	Met	Glu	Ala	Ile	Ser	Phe	Arg	Glu	Ala	Val	Ser
			180					185					190		
Arg	Ala	Phe	Lys	Ala	Asp	Phe	Phe	Ser	Leu	Leu	Ala	Trp	Gln	Val	Gly
		195					200						205		

Met Tyr Ser Trp Met Ala Val Ala Thr Phe Ile Leu Phe Lys Asp Glu
 210 215 220
 Ser Leu Glu Lys Thr Ser Trp Thr Phe Trp Phe Met Met Gln Ile Ala
 225 230 235 240
 Met Leu Leu Gly Phe Met Val Ser Tyr Pro Val Asn Ala Trp Leu Ile
 245 250 255
 Lys Ser Gly Ile Lys Lys Gly Met
 260

<210> 9064

<211> 392

<212> PRT

<213> B.fragilis

<400> 9064

Lys Ile Ile Ile Ile Phe Ala Ile Ile Ile Asn Ile Ile Ile Leu Val
 1 5 10 15
 Met Ala Val Ile Asn Pro Phe Val Val Gly Gly Tyr Val Ser Pro Arg
 20 25 30
 Tyr Phe Cys Asp Arg Val Ala Glu Thr Glu Asn Leu Ile Arg Asn Leu
 35 40 45
 Ile Asn Gly Arg Asn Val Ala Leu Val Ser Thr Arg Arg Met Gly Lys
 50 55 60
 Thr Gly Leu Ile Arg His Cys Phe Tyr Gln Pro Leu Ile Lys Glu Gly
 65 70 75 80
 Tyr Tyr Thr Phe Phe Ile Asp Ile Tyr Ala Thr Ser Ser Leu Lys Glu
 85 90 95
 Phe Val Phe Ala Leu Gly Lys Gly Ile Phe Glu Lys Leu Lys Pro Gln
 100 105 110
 Gly Asn Lys Phe Ile Asp Arg Phe Phe Ser Ile Ile Thr Ser Leu Arg
 115 120 125
 Ile Gly Phe Lys Leu Asp Ser Ile Thr Gly Glu Pro Ile Leu Glu Leu
 130 135 140
 Gly Leu Gly Asp Ile His Ala Pro Glu Thr Thr Leu Glu Glu Ile Phe
 145 150 155 160
 Ile Tyr Leu Glu Gln Ala Asp Lys Pro Cys Ile Val Ala Ile Asp Glu
 165 170 175
 Phe Gln Gln Ile Ser Ser Tyr Pro Glu Lys Asn Leu Glu Ala Ile Leu
 180 185 190
 Arg Thr Lys Val Gln His Cys Ser Asn Ser Asn Phe Val Phe Ala Gly
 195 200 205
 Ser Gln Arg His Ile Met Met Asn Ile Phe Asn Ser Pro Ser Arg Pro
 210 215 220
 Phe Tyr Gln Ser Val Ser Met Met His Leu Gly Ala Ile Pro Leu Glu
 225 230 235 240
 Val Tyr Lys Pro Phe Val Lys Gly Leu Phe Glu Glu Asn Gly Lys Lys
 245 250 255
 Val Thr Asp Gln Leu Val Glu Asn Val Tyr Thr Leu Phe Asp Gly His
 260 265 270
 Thr Trp Tyr Val Gln Leu Met Leu Asn Glu Leu Phe Ile Leu Thr Asp
 275 280 285
 Lys Lys Gly Ile Cys Asp Val Pro Met Ile Asn Leu Ala Leu Asn Asn
 290 295 300
 Ile Ile Ala Thr Gln Asp Phe Thr Phe Gln Glu Ile Phe Ser Arg Leu
 305 310 315 320
 Pro Glu Lys Gln Lys Glu Ile Met Ile Ala Ile Ala Lys Glu Gln Lys
 325 330 335
 Ala Lys Gly Val Thr Ser Ala Ala Phe Ile Lys Lys Tyr Arg Leu Thr
 340 345 350

Ser Ala Ser Ser Val Gln Ser Gly Leu Lys Gly Leu Leu Glu Lys Asp
 355 360 365
 Met Leu Thr Gln Glu Ser Gly Gly Tyr Gln Val Tyr Asp Arg Leu Phe
 370 375 380
 Asn Ile Trp Leu Arg Arg Asn Tyr
 385 390

<210> 9065
 <211> 578
 <212> PRT
 <213> B.fragilis

<400> 9065
 Ile Leu Tyr Ile Met Lys Val Tyr Gln Thr Asn Glu Ile Lys Asn Ile
 1 5 10 15
 Ala Leu Leu Gly Asn Asp Gly Ser Gly Lys Thr Thr Leu Thr Glu Ala
 20 25 30
 Leu Leu Tyr Glu Ser Gly Ile Ile Lys Arg Arg Gly Arg Ile Thr Ala
 35 40 45
 Lys Asn Thr Val Ser Asp Tyr Phe Pro Val Glu Gln Glu Tyr Gly Tyr
 50 55 60
 Ser Val Phe Ser Thr Ile Phe His Val Glu Trp Asn Gly Lys Lys Leu
 65 70 75 80
 Asn Ile Ile Asp Cys Pro Gly Ser Asp Asp Phe Val Gly Ala Ala Met
 85 90 95
 Thr Ala Leu Asn Val Thr Asp Thr Ala Ile Leu Leu Leu Asn Gly Gln
 100 105 110
 Tyr Gly Ala Glu Val Gly Thr Gln Asn His Phe Arg Tyr Thr Glu Lys
 115 120 125
 Leu Gly Lys Pro Val Ile Phe Leu Val Asn Gln Leu Asp Asn Glu Lys
 130 135 140
 Cys Asp Tyr Asp Met Val Leu Glu Gln Leu Lys Ser Ile Tyr Gly Pro
 145 150 155 160
 Lys Val Val Pro Val Gln Tyr Pro Leu Ala Thr Gly Pro Asn Phe Asn
 165 170 175
 Ser Leu Ile Asp Val Leu Leu Met Lys Lys Tyr Ser Trp Ala Pro Glu
 180 185 190
 Gly Gly Ala Pro Ile Ile Glu Glu Ile Pro Ala Glu Glu Lys Asp Lys
 195 200 205
 Ala Met Glu Leu His Lys Ala Leu Val Glu Ala Ala Glu Asn Asp
 210 215 220
 Glu Gly Leu Met Glu Lys Phe Phe Glu Gln Asp Ser Leu Thr Glu Asp
 225 230 235 240
 Glu Met Arg Glu Gly Ile Arg Lys Gly Leu Ala Ala Arg Gly Met Phe
 245 250 255
 Pro Val Phe Cys Val Cys Ala Gly Lys Asp Met Gly Val Arg Arg Leu
 260 265 270
 Met Glu Phe Leu Gly Asn Val Val Pro Gly Val Ser Glu Met Pro Lys
 275 280 285
 Val His Asn Thr Arg Gly Glu Val Val Glu Pro Asp Pro Asn Gly Pro
 290 295 300
 Thr Ser Leu Tyr Phe Phe Lys Thr Gly Val Glu Pro His Ile Gly Asp
 305 310 315 320
 Val Gln Tyr Phe Lys Val Met Ser Gly Lys Val His Glu Gly Asp Asp
 325 330 335
 Phe Thr Asn Ala Asp Arg Gly Ser Lys Glu Arg Val Ala Gln Ile Tyr
 340 345 350
 Ala Cys Ala Gly Ala Asn Arg Ile Lys Val Glu Glu Met Val Ala Gly
 355 360 365

Asp	Ile	Gly	Cys	Thr	Val	Lys	Leu	Lys	Asp	Val	His	Thr	Gly	Asn	Thr
370						375					380				
Leu	Asn	Gly	Lys	Gly	Ala	Glu	Asn	Arg	Phe	Asn	Phe	Ile	Lys	Tyr	Pro
385					390					395					400
Asn	Ser	Lys	Tyr	Ser	Arg	Ala	Ile	Lys	Pro	Val	Asn	Glu	Ala	Asp	Thr
				405					410					415	
Glu	Lys	Met	Met	Ala	Ile	Leu	Asn	Arg	Met	Arg	Glu	Glu	Asp	Pro	Thr
			420					425					430		
Trp	Val	Ile	Glu	Gln	Ser	Lys	Glu	Leu	Lys	Gln	Thr	Ile	Val	His	Gly
		435					440					445			
Gln	Gly	Glu	Phe	His	Leu	Arg	Thr	Leu	Lys	Trp	Arg	Leu	Glu	Asn	Asn
		450				455					460				
Glu	Lys	Leu	Gln	Val	Lys	Phe	Glu	Glu	Pro	Lys	Ile	Pro	Tyr	Arg	Glu
465					470					475					480
Thr	Ile	Thr	Lys	Ala	Ala	Arg	Ala	Asp	Tyr	Arg	His	Lys	Lys	Gln	Ser
				485					490					495	
Gly	Gly	Ala	Gly	Gln	Phe	Gly	Glu	Val	His	Leu	Ile	Val	Glu	Pro	Tyr
			500					505					510		
Tyr	Glu	Gly	Met	Pro	Val	Pro	Asp	Met	Tyr	Lys	Phe	Gly	Gly	Gln	Glu
		515					520					525			
Phe	Lys	Ile	Asn	Val	Lys	Gly	Thr	Glu	Glu	Val	Pro	Leu	Glu	Trp	Gly
	530					535					540				
Gly	Lys	Leu	Val	Phe	Val	Asn	Ser	Ile	Val	Gly	Gly	Ser	Ile	Asp	Ala
545					550					555					560
Arg	Phe	Leu	Ala	Gly	His	Leu	Lys	Gly	Phe	Met	Ser	Arg	Met	Asn	Lys
				565					570					575	

Asp Leu

<210> 9066
 <211> 1175
 <212> PRT
 <213> B.fragilis

<400> 9066

Tyr	Pro	His	Ile	Ile	Gln	Pro	Leu	Ile	Arg	Leu	Asn	Tyr	Val	Lys	Thr
1			5						10					15	
Asn	Leu	Leu	Ile	Lys	Ser	Tyr	Lys	Cys	Met	Asn	Asn	His	Gly	Ile	Phe
			20					25					30		
Ser	Pro	Asp	Arg	Thr	Lys	Val	Arg	Thr	Leu	Leu	Ser	Ile	Lys	Ser	Ile
		35					40					45			
Phe	Leu	Phe	Leu	Leu	Phe	Thr	Phe	Ala	Phe	Glu	Met	Ala	Tyr	Ala	Ser
	50					55					60				
Ser	Val	Tyr	Ser	Gln	Thr	Lys	Val	Phe	Thr	Met	Gln	Ser	Ala	Glu	Lys
65					70					75					80
Thr	Val	Leu	Gln	Val	Phe	Lys	Glu	Ile	Glu	Lys	Asn	Ser	Glu	Phe	Ile
				85					90					95	
Ile	Phe	Tyr	Arg	Asp	Gly	Val	Ile	Asp	Leu	Asn	Arg	Lys	Val	Ser	Val
			100					105					110		
Asn	Val	Val	Asn	Gln	Ser	Val	Asp	Lys	Ile	Leu	Glu	Gln	Leu	Leu	Ala
		115					120					125			
His	Thr	Asp	Asn	Gly	Phe	Thr	Ile	Lys	Asp	Arg	Gln	Ile	Ile	Ile	Tyr
	130					135					140				
Lys	Lys	Glu	Thr	Ser	Ala	Thr	Pro	Ser	Val	Ser	Gln	Gln	Lys	Asn	Lys
145					150					155					160
Ile	Lys	Val	Thr	Gly	Val	Val	Thr	Asp	Ala	Lys	Gly	Glu	Ser	Ile	Ile
				165					170					175	
Gly	Ala	Asn	Val	Val	Val	Lys	Gly	Asn	Pro	Thr	Ile	Gly	Ala	Ile	Thr
			180					185					190		

Asn	Met	Glu	Gly	Arg	Tyr	Glu	Val	Met	Leu	Pro	Ser	Asp	Asp	Val	Ile	195	200	205
Leu	Leu	Val	Ser	Tyr	Leu	Gly	Tyr	Asn	Thr	Glu	Glu	Ile	Lys	Val	Lys	210	215	220
Gly	Arg	Arg	Asn	Ile	Asn	Val	Val	Leu	His	Glu	Asp	Ser	Lys	Ala	Leu	225	230	235
Asp	Glu	Val	Val	Ile	Val	Gly	Tyr	Gly	Lys	Gln	Lys	Lys	Glu	Ser	Val	245	250	255
Val	Val	Ser	Met	Ser	Ser	Ile	Lys	Pro	Lys	Asp	Ile	Val	Val	Pro	Ser	260	265	270
Arg	Ser	Leu	Asn	Asn	Ser	Leu	Ala	Gly	Gln	Val	Ala	Gly	Leu	Ile	Ala	275	280	285
Val	Gln	Arg	Ser	Gly	Glu	Pro	Gly	Tyr	Asp	Asn	Ala	Glu	Phe	Trp	Ile	290	295	300
Arg	Gly	Val	Ser	Thr	Phe	Ala	Gly	Gly	Thr	Ser	Pro	Leu	Val	Leu	Val	305	310	315
Asp	Gly	Val	Pro	Arg	Asn	Met	Ser	Asp	Ile	Glu	Pro	Asp	Glu	Ile	Glu	325	330	335
Thr	Phe	Ser	Val	Leu	Lys	Asp	Ala	Ala	Ala	Thr	Ala	Ile	Tyr	Gly	Ala	340	345	350
Glu	Gly	Ala	Asn	Gly	Val	Val	Leu	Val	Thr	Thr	Lys	Arg	Gly	Arg	Val	355	360	365
Glu	Lys	Ala	Lys	Ile	Ser	Phe	Lys	Thr	Glu	His	Thr	Ile	Ser	Ser	Pro	370	375	380
Thr	Arg	Leu	Pro	Glu	Phe	Val	Gly	Ser	Ala	Asp	Tyr	Leu	Ser	Leu	Tyr	385	390	395
Asn	Glu	Ala	Leu	Arg	Asn	Asp	Gly	Glu	Gly	Pro	Gln	Phe	Ser	Asp	Glu	405	410	415
Leu	Ile	Ala	His	Tyr	Arg	Asn	Asn	Asp	Asp	Pro	Asp	Leu	Tyr	Pro	Asn	420	425	430
Thr	Asn	Trp	Ile	Asp	Glu	Leu	Leu	Arg	Lys	Asn	Thr	Phe	Ser	His	Arg	435	440	445
Tyr	Thr	Leu	Asn	Val	Arg	Gly	Gly	Thr	Glu	Lys	Ala	Lys	Tyr	Phe	Val	450	455	460
Ser	Gly	Ala	Tyr	Tyr	Asn	Glu	Ser	Gly	Leu	Phe	Lys	Asn	Arg	Pro	Asn	465	470	475
Gly	Ile	Tyr	Asp	Thr	Asn	Ile	Gly	Ile	Asp	Arg	Phe	Asn	Leu	Arg	Ser	485	490	495
Asn	Ile	Asp	Met	Ala	Val	Ser	Ser	Thr	Thr	Thr	Val	Gly	Val	Asp	Leu	500	505	510
Ala	Met	Gln	Tyr	Leu	Ile	Asn	Asn	Tyr	Pro	Gly	Thr	Gly	Thr	Ser	Thr	515	520	525
Ile	Phe	Arg	Ser	Met	Leu	Ile	Thr	Pro	Pro	Tyr	Ala	Phe	Pro	Ala	Val	530	535	540
Tyr	Ser	Asp	Gly	Thr	Val	Ala	Thr	Tyr	Ala	Gln	Glu	Arg	Asp	Ala	Asn	545	550	555
Met	Arg	Asn	Pro	Tyr	Asn	Leu	Leu	Met	Asn	Ser	Gly	Tyr	Ala	Lys	Glu	565	570	575
Tyr	Arg	Thr	Gly	Ile	Gln	Ser	Lys	Val	Asn	Val	Asn	Gln	Lys	Leu	Asp	580	585	590
Phe	Ile	Thr	Lys	Gly	Leu	Ser	Ala	Asn	Leu	Asn	Val	Ser	Tyr	Asp	Tyr	595	600	605
Asp	Ser	Glu	Met	Ile	Ile	Arg	Arg	Glu	Tyr	Asn	Pro	Thr	Arg	Tyr	His	610	615	620
Ala	Thr	Gly	Arg	Asp	Glu	Leu	Gly	Gln	Leu	Ile	Phe	Ser	Thr	Val	Val	625	630	635
Ser	Gly	Asn	Pro	Asp	Ile	Gln	Asp	Pro	Lys	Asn	Ser	Ala	Thr	Ser	Ala	645	650	655
Thr	Lys	Lys	Ile	Tyr	Ile	Asp	Ala	Ser	Ile	Asn	Tyr	Lys	Arg	Thr	Phe			

195 200 205
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 225 230 235
 245 250 255
 260 265 270
 275 280 285
 290 295 300
 305 310 315
 325 330 335
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 355 360 365
 370 375 380
 385 390 395
 405 410 415
 420 425 430
 435 440 445
 450 455 460
 465 470 475
 485 490 495
 500 505 510
 515 520 525
 530 535 540
 545 550 555
 565 570 575
 580 585 590
 595 600 605
 610 615 620
 625 630 635
 645 650 655

			660					665					670				
Gly	Lys	His	Asp	Val	Gly	Ala	Met	Leu	Leu	Tyr	Met	Gln	Lys	Glu	Thr		
		675					680					685					
Gln	Gln	His	Asn	Val	Pro	Leu	Pro	Phe	Arg	Lys	Gln	Gly	Phe	Val	Gly		
	690					695					700						
Arg	Ala	Thr	Tyr	Gly	Tyr	Asp	Gly	Arg	Tyr	Phe	Ile	Glu	Gly	Asn	Phe		
705					710					715					720		
Gly	Tyr	Thr	Gly	Ser	Glu	Ala	Phe	Ala	Glu	Gly	Asn	Arg	Phe	Gly	Phe		
			725						730					735			
Phe	Pro	Ala	Ile	Gly	Ala	Ala	Tyr	Tyr	Leu	Ser	Asn	Glu	Ser	Phe	Tyr		
			740						745					750			
Pro	Glu	Ala	Ile	Lys	Lys	Val	Val	Asn	Lys	Leu	Lys	Leu	Arg	Ala	Ser		
		755					760					765					
Val	Gly	Arg	Thr	Gly	Asn	Asp	Lys	Thr	Gly	Gln	Glu	Arg	Phe	Leu	Tyr		
	770					775					780						
Arg	Pro	Thr	Phe	Thr	Thr	Asn	Ala	Gly	Gly	Phe	Thr	Gln	Gly	Ile	Gly		
785					790					795					800		
Asp	Thr	Gly	Gly	Thr	Asn	Gly	Ile	Gly	Asn	Gly	Ile	Val	Glu	Gly	Arg		
				805					810					815			
Phe	Ala	Ala	Pro	Tyr	Leu	Ala	Trp	Glu	Ile	Glu	Asp	Lys	Gln	Asn	Tyr		
			820					825					830				
Gly	Phe	Asp	Leu	Gly	Leu	Phe	Asp	Asn	Arg	Ile	Asp	Ile	Ile	Phe	Asp		
		835					840					845					
Tyr	Phe	Arg	Ser	Glu	Arg	Arg	Asp	Ile	Leu	Leu	Gln	Arg	Arg	Thr	Val		
	850					855					860						
Pro	Gln	Leu	Gly	Gly	Leu	Arg	Gln	Asp	Pro	Trp	Gln	Asn	Phe	Gly	Lys		
865					870					875					880		
Val	Arg	Asn	Gln	Gly	Ile	Asp	Met	Ser	Met	Asn	Leu	Asn	Gln	Gln	Ile		
			885						890					895			
Gly	Lys	Leu	Lys	Leu	Ser	Ala	Arg	Gly	Thr	Phe	Thr	Phe	Thr	Arg	Asn		
			900					905					910				
Lys	Ile	Leu	Glu	Tyr	Asp	Glu	Leu	Pro	Gln	Lys	Tyr	Gly	Tyr	Gln	Ala		
	915						920					925					
Val	Thr	Gly	Thr	Arg	Val	Ser	Glu	Asn	Thr	Leu	Tyr	Ile	Ala	Asp	Arg		
	930					935					940						
Leu	Tyr	Thr	Glu	Asp	Asp	Phe	Ile	Val	Ser	Thr	Asn	Ala	Asn	Gly	Leu		
945					950					955					960		
Lys	Thr	Tyr	Lys	Leu	Arg	Ser	Glu	Leu	Pro	Arg	Pro	Thr	Leu	Gly	Gly		
			965						970					975			
Leu	Ile	Gly	Pro	Gly	Asp	Ile	Lys	Tyr	Val	Asp	Val	Asn	Gly	Asp	Gly		
		980						985					990				
Val	Ile	Asp	Ser	Tyr	Asp	Gln	Val	Arg	Gly	Val	Gly	Asn	Pro	Ser	Thr		
	995						1000					1005					
Pro	Glu	Ile	Ile	Tyr	Gly	Phe	Gly	Leu	Asn	Ala	Glu	Tyr	Lys	Gly	Phe		
	1010					1015					1020						
Tyr	Ala	Ser	Ile	Phe	Phe	Gln	Gly	Ala	Gly	Asn	Thr	Ser	Val	Leu	Leu		
1025					1030					1035					1040		
Gly	Gly	Ala	Thr	Ser	Glu	Gly	Trp	Tyr	Pro	Phe	Ser	Trp	Gly	Val	Asp		
			1045						1050					1055			
Gln	Ser	Asn	Tyr	Arg	Thr	Phe	Ala	Leu	Asp	Arg	Trp	Thr	Glu	Asn	Asn		
		1060						1065					1070				
Pro	Ser	Gln	Asp	Val	Ile	Ile	Pro	Arg	Leu	His	Lys	Asn	Asn	Ala	Asn		
	1075						1080					1085					
Asn	Ala	Asn	Asn	Arg	Val	Ala	Ser	Thr	Trp	Trp	Leu	Arg	Asn	Gly	Ser		
	1090					1095					1100						
Phe	Leu	Arg	Leu	Lys	Asn	Ile	Glu	Phe	Gly	Tyr	Gln	Leu	Pro	Lys	Lys		
1105					1110					1115					1120		
Phe	Met	Asp	Lys	Ile	Gly	Phe	Glu	Ala	Ala	Arg	Ile	Tyr	Ile	Met	Gly		
			1125						1130					1135			

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 660

Tyr Asn Leu Ala Val Trp Asp Asp Ile Lys Tyr Phe Asp Pro Glu Ala
 1140 1145 1150
 Gly Asn Ala Asn Ala Gly Leu Asn Tyr Pro Leu Pro Arg Thr Phe Thr
 1155 1160 1165
 Leu Gly Leu Asp Phe Thr Phe
 1170 1175

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 <213> B.fragilis

<400> 9067
 Lys Thr Ile Phe Met Pro Gly Asn Gly Ser Arg His Thr Gly Lys Ser
 1 5 10 15
 Ser Gly Ser Asn Arg Val Asn Glu Glu Asn Asn Gly Ser Lys Val Gly
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 Glu His Arg Leu Cys Lys Leu Trp Lys Pro Ala Leu Arg Glu His Thr
 35 40 45
 Val Ser Ser Ile Lys Asn Arg Glu Lys Pro Met Leu Leu Pro Ile Thr
 50 55 60
 Val Leu
 65

<210> 9068
 <211> 144
 <212> PRT
 <213> B.fragilis

<400> 9068
 Thr Asp Ile Phe Phe Leu Ile Gly Phe His Ser Arg His Cys Arg Leu
 1 5 10 15
 Cys Ile Ala Ile Val Pro Leu Cys Ser Ala Leu Arg Cys Phe Cys Asp
 20 25 30
 Cys Lys Val Lys His Ile Ile Leu Thr Gly Gly Thr Asp Thr Ala Arg
 35 40 45
 Ser Ile Ala Lys Ala Ile Pro Ala Thr Pro Leu Ser Ala Glu Thr Gly
 50 55 60
 Gly Lys Asn Val Ile Ile Leu Thr Ala Ser Gly Asp Arg Asp His Thr
 65 70 75 80
 Ile Met Asn Ile Val Ile Ser Val Phe Gly Asn Ala Gly Gln Lys Cys
 85 90 95
 Ser Ala Cys Ser Leu Leu Val Glu Arg Ser Val Tyr Glu Asp Lys Asn
 100 105 110
 Phe Gln Lys Lys Leu Ile Asp Val Ala Ser Ser Met Lys Ala Gly Ser
 115 120 125
 Val Trp Asn Pro Gly Asn Val Val Gly Pro Met Ile Thr Asn Lys Lys
 130 135 140

<210> 9069
 <211> 245
 <212> PRT
 <213> B.fragilis

<400> 9069
 Val Tyr Ile Met Phe Gln Glu Ala Ile Ala Gln Tyr Leu Lys Gln Asn
 1 5 10 15
 His Tyr Glu Ser Ile Gln Leu Lys Ser Val Leu Phe Asp Met Asp Gly
 20 25 30

Val	Leu	Phe	Asp	Ser	Met	Pro	Tyr	His	Ala	Glu	Ala	Trp	His	Lys	Thr
	35						40					45			
Met	Lys	Ala	His	Gly	Leu	Asn	Leu	Ser	Arg	Glu	Glu	Ala	Tyr	Met	His
	50					55					60				
Glu	Gly	Arg	Thr	Gly	Ala	Gly	Thr	Ile	Asn	Ile	Val	Cys	Gln	Arg	Gln
65					70					75				80	
Leu	Gly	Arg	Asp	Ala	Thr	Gln	Glu	Glu	Ile	Glu	Ser	Ile	Tyr	Leu	Glu
			85						90					95	
Lys	Ser	Ile	Glu	Phe	Asn	Lys	His	Pro	Gln	Ala	Glu	Arg	Met	Pro	Gly
		100						105					110		
Ala	Trp	Glu	Leu	Leu	Gln	Lys	Ile	Lys	Ala	Glu	Gly	Ile	Ile	Pro	Thr
	115						120					125			
Val	Val	Thr	Gly	Ser	Gly	Gln	Ala	Ser	Leu	Leu	Asp	Arg	Leu	Glu	His
	130					135					140				
Asn	Phe	Pro	Gly	Met	Phe	Arg	Gln	Glu	Leu	Met	Val	Thr	Ala	Phe	Asp
145				150					155					160	
Val	Lys	Tyr	Gly	Lys	Pro	Asn	Pro	Glu	Pro	Tyr	Leu	Met	Ala	Leu	Glu
			165					170						175	
Lys	Gly	Gly	Leu	Lys	Pro	Asn	Glu	Ala	Ile	Val	Ile	Glu	Asn	Ala	Pro
		180					185						190		
Leu	Gly	Val	Glu	Ala	Gly	His	Lys	Ala	Gly	Ile	Phe	Thr	Ile	Ala	Val
	195					200					205				
Asn	Thr	Gly	Pro	Leu	Asn	Gly	Glu	Ile	Leu	Leu	Asn	Ala	Gly	Ala	Asp
210					215						220				
Leu	Leu	Phe	Pro	Ser	Met	Gln	Ala	Leu	Cys	Glu	Ser	Trp	Glu	Lys	Leu
225					230				235						240
Val	Arg	Leu	Leu	His											
				245											

<210> 9070

<211> 485

<212> PRT

<213> B.fragilis

<400> 9070

Ser	Val	Ser	Ile	Tyr	Phe	Val	Ala	Leu	Leu	Arg	Ile	Ile	Phe	Lys	Ile
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Arg	Lys	Asn	Met	Lys	Ser	Tyr	Lys	Leu	Leu	Ala	Phe	Thr	Leu	Phe	
		20					25					30			
Leu	Ala	Phe	Ala	Phe	Asn	Met	Lys	Ala	Gln	Tyr	Val	His	Glu	Arg	Ser
	35						40					45			
Asp	Gln	Tyr	Thr	Pro	Pro	Glu	Asp	Ser	Leu	Val	Ile	Gln	Lys	Leu	His
50						55				60					
His	Trp	Gln	Asp	Gln	Lys	Phe	Gly	Met	Leu	Ile	His	Trp	Gly	Leu	Tyr
65				70					75					80	
Ser	Val	Ala	Gly	Ile	Val	Glu	Ser	Trp	Ser	Ile	Cys	Ser	Glu	Glu	Ala
			85					90					95		
Asp	Trp	Ile	Pro	Arg	Asp	Ser	Thr	Met	Ala	Tyr	Glu	Asp	Tyr	Lys	Lys
		100					105						110		
Trp	Tyr	Trp	Gly	Leu	Lys	Asp	Ser	Phe	Asn	Pro	Thr	Arg	Phe	Asp	Pro
	115						120					125			
Glu	Gln	Trp	Ala	Gln	Ala	Ala	Lys	Ser	Ala	Gly	Met	Arg	Tyr	Ala	Ile
	130					135					140				
Phe	Thr	Thr	Lys	His	His	Asp	Gly	Phe	Asn	Met	Phe	Asn	Thr	Ala	Phe
145				150					155					160	
Ser	Asp	Phe	Ser	Ile	Ala	Lys	Gly	Pro	Phe	Gln	Thr	Asp	Pro	Arg	Ala
			165					170						175	
Asp	Val	Ala	Lys	Tyr	Val	Phe	Glu	Ala	Phe	Arg	Asn	Asn	Asp	Leu	Met
		180					185						190		

Val	Gly	Ala	Tyr	Phe	Ser	Lys	Pro	Asp	Trp	His	Ser	Glu	Tyr	Tyr	Trp
	195						200					205			
Trp	Pro	Arg	Tyr	Ala	Thr	Pro	Arg	Arg	Thr	Gln	Asn	Tyr	Asn	Ile	Asp
	210						215				220				
Lys	Asn	Pro	Trp	Arg	Trp	Asn	Gln	Phe	Lys	Glu	Phe	Thr	Tyr	Asn	Gln
	225					230				235					240
Ile	Gly	Glu	Leu	Met	His	Asn	Tyr	Gly	Pro	Ile	Asp	Ile	Leu	Trp	Leu
				245					250					255	
Asp	Gly	Gly	Trp	Val	Asn	Asn	Pro	Gly	Thr	Lys	Ser	Val	Leu	Asp	Met
			260					265					270		
Asp	Arg	Ile	Ser	Gln	Met	Ala	Arg	Gln	Ala	Gln	Pro	Gly	Ile	Leu	Phe
		275					280					285			
Val	Asp	Arg	Thr	Ile	His	Gly	Lys	Tyr	Glu	Asn	Tyr	Gln	Thr	Pro	Glu
	290					295					300				
Gln	Gln	Ile	Pro	Asp	Lys	Gln	Leu	Pro	Tyr	Pro	Trp	Glu	Thr	Cys	Met
	305				310					315					320
Thr	Leu	Gly	Val	Asp	Trp	Gly	Tyr	Thr	Pro	His	Ala	Val	Phe	Lys	Ser
				325					330					335	
Pro	Val	Thr	Val	Ile	Ala	Lys	Leu	Met	Glu	Ile	Val	Ala	Lys	Gly	Gly
			340					345					350		
Ser	Leu	Leu	Leu	Gly	Val	Gly	Pro	Thr	Pro	Glu	Gly	Ile	Leu	Gln	Asp
		355					360					365			
Glu	Ile	Val	Ser	Arg	Leu	Gln	Thr	Ile	Gly	Gly	Trp	Met	Lys	Lys	Asn
	370					375					380				
Gly	Thr	Ala	Ile	Tyr	Asn	Thr	Val	Thr	Thr	Pro	Gln	Tyr	Tyr	Ser	Glu
	385				390					395					400
Gly	Ile	Trp	Phe	Thr	Met	Asn	Lys	Asp	Gly	Lys	Thr	Met	Tyr	Ala	Leu
				405					410					415	
Tyr	Ser	Asn	Pro	Glu	Thr	Glu	Lys	Phe	Pro	Asp	Tyr	Ile	Glu	Trp	Glu
			420					425					430		
Asn	Asn	Ile	Pro	Ala	Lys	Arg	Ser	Ala	Ile	Tyr	Cys	Leu	Gln	Asn	Gly
			435				440					445			
Lys	Lys	Val	Lys	Trp	Glu	Ile	Lys	Asn	Asn	Arg	Val	Arg	Val	Tyr	Leu
		450				455				460					
Pro	Gln	Asn	Leu	Lys	Thr	Glu	Val	Asn	Ala	Leu	Ala	Phe	Ser	Phe	Thr
	465				470					475					480
Arg	Gln	Ala	Ile	Gln											
				485											

<210> 9071

<211> 171

<212> PRT

<213> B.fragilis

<400> 9071

Tyr	Asp	Cys	Met	Lys	Lys	Leu	Phe	Phe	Pro	Leu	Leu	Ser	Leu	Cys	Leu
1				5					10					15	
Leu	Thr	Thr	Ala	Cys	Lys	Asp	Ser	Val	Pro	Ser	Pro	Thr	Ile	Glu	Met
			20					25					30		
Gln	Gly	Leu	Tyr	Val	Asn	Asp	Gly	Glu	Met	Asp	Tyr	Thr	Arg	Gln	Met
		35					40					45			
Glu	Ala	Leu	Pro	Pro	Leu	Lys	Val	Asp	Asp	Glu	Leu	Glu	Ile	Ser	Leu
	50					55				60					
Lys	Leu	Asp	Gly	Asn	Gly	Glu	Glu	Leu	Asn	Thr	Phe	Leu	Val	Lys	Glu
	65				70					75					80
Glu	Thr	Pro	Gly	Ser	Lys	Glu	Thr	Ala	Val	Glu	Ile	Asp	Phe	Asn	Asp
				85					90					95	
Leu	Pro	Glu	Glu	Thr	Leu	Ser	Asp	Asp	Lys	Glu	Phe	Thr	Asp	Lys	Asp
			100					105					110		

Asn	Gly	Lys	Leu	Gly	Phe	Lys	Asp	Gly	Val	Ser	Gln	Thr	Gln	Ile	Gly
		115					120					125			
Ile	Arg	Ala	Lys	Val	Gln	Gln	Val	Thr	Glu	Asp	Gly	Val	Lys	Leu	Lys
		130				135					140				
Phe	Tyr	Leu	Phe	Ser	Lys	Pro	Val	Asn	Cys	Glu	Gly	Ala	Lys	Tyr	Glu
		145			150					155					160
Leu	Glu	Ile	Lys	Thr	Ser	Asp	Lys	Gln	Asp	Asp					
				165					170						

<210> 9072

<211> 1285

<212> PRT

<213> B.fragilis

<400> 9072

Tyr	Asp	Arg	Met	Gly	Leu	Arg	Thr	Ile	Gln	Asp	Trp	Met	Val	Lys	Arg
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Gln	Leu	Ser	Gly	Ile	Pro	Gly	Ile	Val	Glu	Ile	Asn	Ser	Phe	Gly	Gly
			20					25					30		
Tyr	Leu	Lys	Gln	Tyr	Glu	Val	Ala	Val	Asp	Pro	Asn	Ala	Leu	Phe	Ser
		35				40						45			
Leu	Asn	Ile	Thr	Ile	Gly	Lys	Val	Phe	Glu	Ala	Leu	Ser	Lys	Asn	Asn
	50					55					60				
Gln	Asn	Thr	Gly	Gly	Ser	Tyr	Ile	Glu	Lys	Ala	Lys	Asn	Ala	Tyr	Tyr
	65				70					75					80
Ile	Arg	Ser	Glu	Gly	Met	Ile	Ser	Arg	Thr	Lys	Asp	Ile	Glu	Gln	Ile
				85					90					95	
Val	Val	Ala	Asn	Arg	Asn	Gly	Ile	Pro	Val	His	Ile	Ser	Asp	Val	Gly
			100					105					110		
Ile	Val	Arg	Phe	Gly	Ala	Pro	Lys	Arg	Phe	Gly	Ala	Met	Thr	Lys	Asp
		115				120						125			
Gly	Lys	Gly	Glu	Cys	Val	Gly	Gly	Ile	Ala	Met	Met	Leu	Lys	Gly	Ala
	130					135					140				
Asn	Ala	Asn	Val	Val	Thr	Gln	Glu	Leu	Glu	Lys	Arg	Val	Glu	Lys	Ile
	145				150					155					160
Gln	Lys	Leu	Leu	Pro	Glu	Gly	Val	Ser	Ile	Glu	Pro	Tyr	Leu	Asn	Arg
			165					170						175	
Ser	Glu	Leu	Val	Asn	Arg	Asn	Ile	Ser	Thr	Val	Val	His	Asn	Leu	Ile
		180						185					190		
Glu	Gly	Ala	Ile	Ile	Val	Phe	Val	Val	Leu	Ile	Ile	Phe	Leu	Gly	Asn
		195				200						205			
Ile	Arg	Ala	Gly	Leu	Ile	Val	Ala	Ser	Val	Ile	Pro	Leu	Ala	Met	Leu
	210					215									
Phe	Ala	Phe	Ile	Leu	Met	Arg	Ile	Phe	Gly	Val	Thr	Ala	Asn	Leu	Met
	225				230					235					240
Ser	Leu	Gly	Ala	Ile	Asp	Phe	Gly	Ile	Val	Val	Asp	Gly	Ser	Ile	Val
				245					250					255	
Ile	Val	Glu	Gly	Ile	Leu	Ala	His	Leu	Tyr	Asn	Asn	Lys	Leu	Asn	Gly
		260						265					270		
Arg	Thr	Leu	Ser	Gly	Thr	Glu	Met	Asp	Glu	Glu	Val	Glu	Lys	Gly	Ala
	275					280						285			
Ser	Gly	Val	Val	Arg	Ser	Ala	Thr	Phe	Ala	Val	Phe	Ile	Ile	Leu	Ile
	290				295						300				
Val	Phe	Phe	Pro	Ile	Leu	Thr	Leu	Ser	Gly	Ile	Glu	Gly	Lys	Tyr	Phe
	305				310					315					320
Thr	Pro	Met	Ala	Lys	Thr	Leu	Val	Phe	Cys	Ile	Ile	Gly	Ala	Leu	Leu
				325					330					335	
Leu	Ser	Leu	Thr	Tyr	Val	Pro	Met	Met	Ala	Ser	Leu	Phe	Leu	Lys	His
			340					345					350		

Thr Ile Met Val Lys Pro Thr Phe Ala Asp Arg Phe Phe Glu Lys Leu
 355 360 365
 Asn Val Ile Tyr Gln Arg Cys Leu His Phe Cys Leu Arg Phe Lys Trp
 370 375 380
 Gln Thr Val Thr Val Ala Phe Ala Thr Leu Ile Gly Ser Phe Leu Leu
 385 390 395 400
 Phe Gly Arg Leu Gly Ala Glu Phe Ile Pro Thr Leu Asp Glu Gly Asp
 405 410 415
 Phe Ala Met Gln Met Thr Leu Pro Ala Gly Ser Ser Leu Ser Glu Ser
 420 425 430
 Ile Glu Val Ser Asn Gln Ala Glu Lys Leu Leu Met Asp Arg Phe Pro
 435 440 445
 Glu Ile Lys His Val Val Ala Lys Ile Gly Thr Ala Glu Val Pro Thr
 450 455 460
 Asp Pro Met Ala Val Glu Asp Ala Asp Val Met Ile Val Met Lys Pro
 465 470 475 480
 Phe Lys Glu Trp Thr Ser Ala Ser Ser Arg Ala Glu Met Val Glu Lys
 485 490 495
 Met Lys Glu Ala Leu Gln Pro Leu Glu Asn Arg Ala Glu Phe Asn Phe
 500 505 510
 Ser Gln Pro Ile Gln Leu Arg Phe Asn Glu Leu Met Thr Gly Ala Lys
 515 520 525
 Ala Asp Ile Ala Val Lys Leu Tyr Gly Glu Asp Thr His Glu Leu Tyr
 530 535 540
 Ala Lys Ala Lys Glu Ala Ala Arg Phe Val Glu Gln Val Ser Gly Ala
 545 550 555 560
 Ser Asp Val Ile Val Glu Gln Thr Met Gly Leu Pro Gln Leu Val Val
 565 570 575
 Lys Tyr Asn Arg Gly Lys Ile Ala Arg Tyr Gly Ile Asn Ile Glu Glu
 580 585 590
 Leu Asn Thr Met Ile Arg Thr Ala Tyr Ala Gly Glu Val Ser Gly Val
 595 600 605
 Val Phe Glu Asn Glu Arg Arg Phe Asp Leu Val Val Arg Leu Asp Gln
 610 615 620
 Glu Lys Val Ala Asp Leu Ser Leu Asp Lys Leu Phe Ile Arg Thr Ser
 625 630 635 640
 Glu Gly Ile Gln Ile Pro Val Ser Glu Val Ala Ser Ile Asp Leu Val
 645 650 655
 Asn Gly Pro Leu Gln Ile Asn Arg Asp Ala Thr Lys Arg Arg Ile Val
 660 665 670
 Ile Gly Val Asn Val Arg Asp Ala Asp Ile Gln Gln Val Val Ser Glu
 675 680 685
 Ile Gln Gln Ile Leu Asp Lys Asn Ile Lys Leu Gln Pro Gly Tyr Tyr
 690 695 700
 Phe Glu Tyr Gly Gly Gln Phe Glu Asn Leu Gln Asn Ala Ile Arg Thr
 705 710 715 720
 Leu Thr Ile Val Ile Pro Val Ala Leu Met Leu Ile Leu Leu Ile Leu
 725 730 735
 Phe Phe Ala Phe Lys Asn Val Thr Tyr Thr Leu Met Val Phe Ser Thr
 740 745 750
 Val Pro Leu Ser Leu Ile Gly Gly Ile Leu Ala Leu Trp Leu Arg Gly
 755 760 765
 Leu Pro Phe Ser Ile Ser Ala Gly Val Gly Phe Ile Ala Leu Phe Gly
 770 775 780
 Val Ala Val Leu Asn Gly Ile Leu Met Ile Asn His Phe Asn Asp Leu
 785 790 795 800
 Arg Lys Gln Asn Lys Tyr Ala Met Thr Thr Asn Gln Ile Ile Lys Arg
 805 810 815
 Gly Thr Pro His Leu Leu Arg Pro Val Phe Leu Thr Gly Leu Val Ala

820										825					830					
Ser	Leu	Gly	Phe	Val	Pro	Met	Ala	Ile	Ala	Thr	Ser	Ala	Gly	Ala	Glu					
835										840					845					
Val	Gln	Arg	Pro	Leu	Ala	Thr	Val	Val	Ile	Gly	Gly	Leu	Ile	Leu	Ser					
850										855					860					
Thr	Ile	Leu	Thr	Leu	Ile	Ile	Leu	Pro	Val	Phe	Tyr	Lys	Ile	Val	Asn					
865										870					875					
Ala	Ala	Ser	Ala	Gly	Trp	Lys	Gln	Pro	Lys	Arg	Arg	Leu	His	Leu	Phe					
885										890					895					
Ile	Leu	Leu	Pro	Ala	Leu	Leu	Leu	Ser	Ala	Thr	Ala	Thr	Ala	Gln	Ala					
900										905					910					
Pro	Gln	Thr	Val	Ser	Leu	Glu	Gln	Ala	Ile	Glu	Ile	Ala	Lys	Gln	Asn					
915										920					925					
His	Pro	Arg	Leu	Lys	Ile	Ala	Thr	Thr	Ala	Ile	Arg	Gln	Ala	Gln	Ala					
930										935					940					
Gly	Arg	Gly	Glu	Ile	Val	Glu	Ala	Thr	Pro	Thr	Thr	Phe	Asn	Tyr	Ser					
945										950					955					
Trp	Gly	Gln	Leu	Asn	Gly	Glu	Asn	Lys	Lys	Asp	Lys	Glu	Met	Ala	Phe					
965										970					975					
Glu	Gln	Ser	Leu	Gly	Ser	Leu	Leu	Thr	Pro	Phe	Tyr	Lys	Asn	Val	Leu					
980										985					990					
Ile	Asn	Arg	Gln	Val	Gln	Thr	Ser	Thr	Tyr	Tyr	Leu	Gln	Met	Val	Glu					
995										1000					1005					
Lys	Glu	Ile	Thr	Ala	Glu	Val	Lys	Arg	Ala	Trp	Ala	Tyr	Tyr	Gln	Tyr					
1010										1015					1020					
Ala	Ser	Gly	Met	Ser	Ser	Leu	Tyr	His	Asp	Gln	Asp	Arg	Met	Ala	Ala					
1025										1030					1035					
Glu	Leu	Arg	Arg	Ile	Gly	Glu	Leu	Arg	Tyr	Glu	Gln	Gly	Glu	Ile	Thr					
1045										1050					1055					
Leu	Leu	Glu	Lys	Asn	Met	Met	Thr	Thr	Leu	Ala	Ala	Asp	Leu	His	Asn					
1060										1065					1070					
Arg	Leu	Phe	Gln	Ala	Leu	Glu	Glu	Lys	Lys	Val	Ala	Leu	Ala	Arg	Phe					
1075										1080					1085					
Gln	Trp	Ser	Cys	Tyr	Ala	Asp	Asp	Pro	Ile	Thr	Pro	Lys	Asp	Thr	Ile					
1090										1095					1100					
Met	Thr	Leu	Phe	Pro	Thr	Asp	Cys	Glu	Gln	Arg	Ser	Thr	Ser	Glu	Ala					
1105										1110					1115					
His	Leu	Gly	Phe	Phe	Asn	Ser	Gln	Ala	Ser	Glu	Ala	Arg	Ala	Ile	Leu					
1125										1130					1135					
Asn	Val	Glu	Arg	Ser	Arg	Phe	Phe	Pro	Glu	Leu	Ser	Ile	Gly	Tyr	Ser					
1140										1145					1150					
Arg	Gln	Asp	Ile	Leu	Pro	Leu	Lys	Asn	Leu	Asn	Ala	Trp	Met	Val	Gly					
1155										1160					1165					
Val	Ser	Phe	Pro	Ile	Tyr	Phe	Leu	Pro	Gln	Lys	Ser	Arg	Ile	Lys	Gln					
1170										1175					1180					
Ala	Lys	Leu	Ala	Val	Ser	Ala	Ala	Gln	Ile	Gln	Ala	Glu	Ala	Asn	Ile					
1185										1190					1195					
Arg	Glu	Leu	Asn	Asn	Lys	Ile	Thr	Glu	Leu	Ser	Ala	Ala	Leu	Arg	Arg					
1205										1210					1215					
Tyr	Glu	Glu	Ser	Leu	Arg	Phe	Tyr	Thr	Ser	Ser	Ala	Leu	Lys	Glu	Ala					
1220										1225					1230					
Asp	Glu	Leu	Val	Lys	Thr	Ala	Asn	Leu	Gln	Leu	Gln	His	Ser	Glu	Thr					
1235										1240					1245					
Gly	Ile	Ala	Glu	Phe	Ile	Gln	Ser	Val	Ser	Ala	Ala	Arg	Glu	Ile	Arg					
1250										1255					1260					
Lys	Gly	Tyr	Ile	Glu	Thr	Ile	Tyr	Gln	Tyr	Asn	Ile	Ala	Ser	Leu	Glu					
1265										1270					1275					
Tyr	Glu	Leu	Tyr	Gln																
1285																				

[illegible]

Tyr	Arg	Leu	Ile	Asn	Tyr	Leu	Val	Phe	Ile	Leu	Ile	Tyr	Gln	Lys	Thr
1				5					10					15	
Phe	Ile	Ala	Leu	Gln	Ala	Arg	Leu	Leu	Met	Ile	Ser	Lys	Leu	Leu	His
		20						25				30			
Ile	Tyr	Leu	Leu	Ile	Lys	Lys	Ser	Lys	Thr	His	Cys	Ile	Val	Glu	Lys
		35					40					45			
Gln	Ile	Tyr	Ser	Tyr	Glu	Glu	Ala	Phe	Glu	Glu	Ser	Leu	Arg	Tyr	Phe
	50					55					60				
Gln	Gly	Asp	Glu	Leu	Ala	Ala	Arg	Val	Trp	Val	Asn	Lys	Tyr	Ala	Val
65				70						75					80
Lys	Asp	Ser	Phe	Gly	Asn	Ile	Tyr	Glu	Lys	Ser	Pro	Lys	Asp	Met	His
				85					90					95	
Trp	Arg	Leu	Ala	Asn	Glu	Val	Ala	Arg	Ile	Glu	Ala	Lys	Tyr	Pro	Asn
			100					105					110		
Ala	Leu	Ser	Ser	Glu	Gln	Leu	Phe	Glu	Leu	Phe	Asp	His	Phe	Lys	Tyr
		115					120					125			
Ile	Val	Pro	Gln	Gly	Ser	Pro	Met	Thr	Gly	Ile	Gly	Asn	Asp	Tyr	Gln
	130					135						140			
Val	Ala	Ser	Leu	Ser	Asn	Cys	Phe	Val	Ile	Gly	Ile	Asp	Gly	Ser	Ala
145					150					155					160
Asp	Ser	Tyr	Gly	Ala	Ile	Ile	Lys	Ile	Asp	Glu	Glu	Gln	Val	Gln	Leu
				165					170					175	
Met	Lys	Arg	Arg	Gly	Gly	Val	Gly	His	Asp	Leu	Ser	His	Ile	Arg	Pro
			180					185					190		
Lys	Gly	Ser	Pro	Val	Lys	Asn	Ser	Ala	Leu	Thr	Ser	Thr	Gly	Leu	Val
		195					200					205			
Pro	Phe	Met	Glu	Arg	Tyr	Ser	Asn	Ser	Thr	Arg	Glu	Val	Ala	Gln	Asp
	210					215					220				
Gly	Arg	Arg	Gly	Ala	Leu	Met	Leu	Ser	Val	Ser	Ile	Lys	His	Pro	Asp
225				230						235					240
Ser	Glu	Ala	Phe	Ile	Asp	Ala	Lys	Met	Thr	Glu	Gly	Lys	Val	Thr	Gly
				245					250					255	
Ala	Asn	Val	Ser	Val	Lys	Leu	Asp	Asp	Ala	Phe	Met	Ser	Ala	Ala	Val
		260						265					270		
Glu	Gly	Arg	Lys	Tyr	Thr	Gln	Gln	Tyr	Pro	Ile	Asp	Ser	Asp	His	Pro
		275				280						285			
Thr	Thr	Val	Lys	Glu	Ile	Glu	Ala	Ser	Asn	Leu	Trp	Lys	Lys	Ile	Val
	290					295					300				
His	Asn	Ala	Trp	Lys	Ser	Ala	Glu	Pro	Gly	Val	Leu	Phe	Trp	Asp	Thr
305				310						315					320
Ile	Ile	Arg	Glu	Ser	Val	Pro	Asp	Cys	Tyr	Ala	Asp	Leu	Gly	Tyr	Lys
				325					330					335	
Thr	Val	Ser	Thr	Asn	Pro	Cys	Gly	Glu	Ile	Pro	Leu	Cys	Pro	Tyr	Asp
			340					345					350		
Ser	Cys	Arg	Leu	Leu	Ala	Ile									

Glu Val Lys His Thr Glu Arg Gly Leu Trp Glu Lys Ile Tyr Lys Lys
 420 425 430
 Ser Gly Gln Gly Arg Arg Thr Gly Val Gly Ile Thr Ala Glu Gly Asp
 435 440 445
 Met Leu Ala Ala Leu Gly Met Arg Tyr Gly Thr Glu Glu Ala Thr Glu
 450 455 460
 Phe Ser Glu Lys Val His Lys Ala Val Ala Leu Gly Ala Tyr Arg Ser
 465 470 475 480
 Ser Val Asp Met Ala Lys Glu Arg Gly Ala Phe Asp Val Tyr Asp Ser
 485 490 495
 Glu Arg Glu Lys Asn Asn Pro Phe Ile Asn Arg Leu Arg Glu Ala Asp
 500 505 510
 Pro Ala Leu Tyr Glu Asp Met Lys Lys Tyr Gly Arg Arg Asn Ile Ala
 515 520 525
 Cys Leu Thr Ile Ala Pro Thr Gly Thr Thr Ser Leu Met Thr Gln Thr
 530 535 540
 Thr Ser Gly Ile Glu Pro Val Phe Leu Pro Val Tyr Lys Arg Arg Arg
 545 550 555 560
 Lys Val Asn Pro Asn Asp Thr Asn Val Arg Val Asp Phe Val Asp Glu
 565 570 575
 Thr Gly Asp Ala Phe Glu Glu Tyr Ile Val Phe His His Lys Phe Val
 580 585 590
 Thr Trp Met Glu Ala Asn Gly Tyr Asp Pro Ala Lys Arg Tyr Thr Gln
 595 600 605
 Glu Glu Ile Asp Glu Leu Val Ala Lys Ser Pro Tyr Lys Ala Thr
 610 615 620
 Ser Asn Asp Val Asp Trp Leu Met Lys Val Arg Met Gln Gly Lys Ile
 625 630 635 640
 Gln Lys Trp Val Asp His Ser Ile Ser Val Thr Ile Asn Leu Pro Asn
 645 650 655
 Asp Val Asp Glu Glu Leu Val Asn Arg Leu Tyr Val Glu Ala Trp Lys
 660 665 670
 Ser Gly Cys Lys Gly Cys Thr Val Tyr Arg Asp Gly Ser Arg Ser Gly
 675 680 685
 Val Leu Ile Ser Ala Lys Ser Asp Lys Asp Lys Lys Glu Glu Leu Pro
 690 695 700
 Pro Cys Lys Pro Pro Thr Val Val Glu Val Arg Pro Thr Val Leu Glu
 705 710 715 720
 Ala Asp Val Val Arg Phe Gln Asn Asn Lys Glu Lys Trp Val Ala Leu
 725 730 735
 Val Gly Leu Leu Asp Gly Arg Pro Tyr Glu Ile Phe Thr Gly Leu Gln
 740 745 750
 Asp Asp Asp Glu Gly Ile Ile Ile Pro Lys Ser Val Asn Thr Gly Arg
 755 760 765
 Ile Ile Lys Asn Val Asp Glu Asn Gly Asn Lys Arg Tyr Asp Phe Gln
 770 775 780
 Phe Glu Asn Lys Arg Gly Tyr Lys Met Thr Ile Glu Gly Leu Ser Glu
 785 790 795 800
 Lys Phe Asn Lys Glu Tyr Trp Asn Tyr Ala Lys Leu Ile Ser Gly Val
 805 810 815
 Leu Arg Trp Arg Met Pro Ile Glu Gln Val Ile Lys Leu Val Gly Ser
 820 825 830
 Leu Gln Leu Asp Ser Glu Asn Ile Asn Thr Trp Lys Asn Gly Val Glu
 835 840 845
 Arg Ala Leu Lys Lys Tyr Val Gln Asp Gly Thr Glu Ala Lys Gly Lys
 850 855 860
 Lys Cys Pro Asn Cys Gly Asn Glu Thr Leu Val Tyr Gln Glu Gly Cys
 865 870 875 880
 Leu Ile Cys Thr Thr Cys Gly Ala Ser Arg Cys Gly

<210> 9074
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 <213> B.fragilis

<400> 9074

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			20					25					30		
Lys	Asn	Asn	Pro	Glu	Gln	Ala	Val	Ala	Leu	Thr	Thr	Val	Asp	Gly	Ile
		35				40						45			
His	Trp	Ser	Asn	Glu	Ile	Ser	Ile	Gln	Leu	Pro	Ala	Glu	Gly	Val	Val
	50					55					60				
Glu	Tyr	Ser	Tyr	His	Ile	Tyr	Arg	Asp	Gly	Lys	Ala	Ile	Arg	Thr	Glu
65					70					75					80
Trp	Asn	Ser	Phe	Pro	Arg	Arg	Ile	Tyr	Leu	Pro	Ala	Asp	Val	Lys	Lys
				85					90					95	
Ser	Leu	Arg	Ile	Asn	Asp	Cys	Trp	Lys	Asn	Leu	Pro	Glu	Gln	Gln	Tyr
			100					105					110		
Phe	Tyr	Ser	Ser	Ala	Phe	Thr	Glu	Ala	Leu	Leu	Ala	His	Arg	Glu	Arg
		115					120					125			
Ser	Ala	Ile	Pro	Lys	Ser	Tyr	Lys	Lys	Gly	Leu	Met	Ile	Lys	Ala	Tyr
	130					135					140				
Ala	Pro	Arg	Ile	Asn	Ser	Lys	Tyr	Cys	Leu	Ala	Ile	Cys	Gly	Asn	Gln
145					150					155					160
Lys	Ala	Leu	Gly	Asn	Trp	Asp	Pro	Asp	Lys	Ala	Trp	Pro	Met	Ser	Asp
				165					170					175	
Ala	Asn	Phe	Pro	Glu	Trp	Gln	Ala	Glu	Leu	Asp	Ala	Ser	Lys	Leu	Glu
			180					185					190		
Phe	Pro	Leu	Glu	Tyr	Lys	Phe	Val	Leu	Tyr	Asn	Lys	Glu	Glu	Lys	Arg
		195					200					205			
Ala	Glu	Ala	Trp	Glu	Asn	Asn	Pro	Asn	Arg	Tyr	Leu	Ala	Ala	Pro	Glu
	210					215					220				
Ile	Lys	Ala	Asn	Glu	Thr	Leu	Val	Ile	Ala	Asp	Arg	Tyr	Ala	Tyr	Phe
225					230					235					240
Asn	Ile	Pro	Ser	Trp	Lys	Gly	Ala	Gly	Val	Ala	Val	Pro	Val	Phe	Ser
			245						250					255	
Leu	Lys	Ser	Glu	Lys	Ser	Phe	Gly	Val	Gly	Asp	Phe	Gly	Asp	Leu	Lys
			260					265					270		
Arg	Met	Val	Asp	Trp	Ala	Val	Ser	Thr	Asn	Gln	Lys	Val	Val	Gln	Ile
		275					280						285		
Leu	Pro	Ile	Asn	Asp	Thr	Thr	Met	Thr	His	Thr	Trp	Thr	Asp	Ser	Tyr
	290					295					300				
Pro	Tyr	Asn	Ser	Ile	Ser	Ile	Tyr	Ala	Phe	His	Pro	Met	Tyr	Ser	Asp
305					310					315					320
Leu	Lys	Gln	Met	Gly	Asn	Leu	Lys	Asp	Lys	Glu	Thr	Ala	Ala	Thr	Phe
				325					330					335	
Asn	Arg	Lys	Gln	Lys	Glu	Leu	Asn	Ala	Leu	Ser	Ala	Ile	Asp	Tyr	Glu
			340					345					350		
Ala	Val	Asn	Arg	Val	Lys	Trp	Glu	Tyr	Phe	His	Gln	Ile	Phe	Lys	Gln
		355					360					365			
Glu	Gly	Glu	Lys	Val	Leu	Ala	Ser	Lys	Ala	Phe	Arg	Ser	Phe	Phe	Glu
	370					375					380				
Ala	Asn	Lys	Asp	Trp	Leu	Gln	Pro	Tyr	Ala	Ala	Phe	Ser	Tyr	Leu	Arg
385					390					395					400
Asp	Leu	Tyr	His	Thr	Pro	Asn	Phe	Arg	Glu	Trp	Pro	Gln	Tyr	Ser	Glu

				405					410				415		
Tyr	Asn	Ala	Gln	Glu	Ile	Glu	Glu	Leu	Cys	Arg	Pro	Asp	Thr	Ala	Asp
			420					425				430			
Tyr	Ala	His	Ile	Ala	Ile	Tyr	Phe	Tyr	Ile	Gln	Phe	Asn	Leu	His	Leu
		435					440					445			
Gln	Leu	Leu	Glu	Ala	Thr	Thr	Tyr	Ala	Arg	Glu	His	Gly	Val	Val	Leu
	450					455						460			
Lys	Gly	Asp	Ile	Pro	Ile	Gly	Ile	Ser	Arg	Asn	Ser	Val	Glu	Ala	Trp
465					470					475					480
Thr	Glu	Pro	Tyr	Tyr	Phe	Asn	Leu	Asn	Gly	Gln	Ala	Gly	Ala	Pro	Pro
				485					490					495	
Asp	Asp	Phe	Ser	Val	Asn	Gly	Gln	Asn	Trp	Gly	Phe	Pro	Thr	Tyr	Asn
			500					505					510		
Trp	Asp	Val	Met	Glu	Asn	Asp	Gly	Tyr	Lys	Trp	Trp	Met	Lys	Arg	Phe
		515					520					525			
Gln	Lys	Met	Ala	Glu	Tyr	Phe	Asp	Ala	Tyr	Arg	Ile	Asp	His	Ile	Leu
	530					535					540				
Gly	Phe	Phe	Arg	Ile	Trp	Glu	Ile	Pro	Met	Asn	Ala	Val	His	Gly	Leu
545					550					555					560
Leu	Gly	Gln	Phe	Val	Pro	Ala	Leu	Pro	Met	Ser	Arg	Glu	Glu	Ile	Glu
				565					570					575	
Ser	Tyr	Gly	Leu	Ser	Phe	Arg	Glu	Glu	Phe	Leu	Arg	Pro	Tyr	Ile	His
			580					585					590		
Glu	Tyr	Phe	Leu	Gly	Gln	Val	Phe	Gly	Pro	His	Thr	Asp	Tyr	Val	Lys
		595					600					605			
Gln	Thr	Phe	Ile	Glu	Pro	Thr	Glu	Thr	Tyr	Glu	Val	Tyr	Arg	Met	Arg
	610					615					620				
Pro	Glu	Phe	Asp	Thr	Gln	Arg	Lys	Val	Glu	Ala	Phe	Phe	Ala	Gly	Lys
625					630					635					640
Asn	Asp	Glu	Asp	Ser	Ile	Trp	Val	Arg	Asp	Gly	Leu	Tyr	Ala	Leu	Ile
				645					650					655	
Ser	Asp	Val	Leu	Phe	Val	Pro	Asp	Arg	Lys	Asp	Pro	Asn	Leu	Tyr	His
		660						665					670		
Pro	Arg	Ile	Gly	Val	Gln	His	Asp	Phe	Ile	Tyr	Arg	Ala	Leu	Asn	Asp
		675					680					685			
Trp	Glu	Lys	Thr	Ala	Phe	Asn	Arg	Leu	Tyr	Asp	Gln	Tyr	Tyr	Tyr	His
	690					695					700				
Arg	His	Asn	Asp	Phe	Trp	Gln	Gln	Gln	Ala	Met	Lys	Lys	Leu	Pro	Gln
705					710					715					720
Leu	Thr	Gln	Ser	Thr	Arg	Met	Leu	Val	Cys	Gly	Glu	Asp	Leu	Gly	Met
				725					730					735	
Ile	Pro	Asp	Cys	Val	Ala	Trp	Val	Met	Asn	Asp	Leu	Arg	Ile	Leu	Ser
			740					745					750		
Leu	Glu	Ile	Gln	Arg	Met	Pro	Lys	Asn	Pro	Ala	Glu	Glu	Phe	Gly	Arg
		755					760					765			
Leu	Asn	Glu	Tyr	Pro	Tyr	Arg	Ser	Val	Cys	Thr	Phe	Ser	Thr	His	Asp
	770					775					780				
Met	Ser	Thr	Leu	Arg	Gly	Trp	Trp	Glu	Glu	Asp	Tyr	Gln	Gln	Thr	Gln
785					790					795					800
Arg	Tyr	Tyr	Asn	Gln	Met	Leu	Gly	His	Tyr	Gly	Thr	Ala	Pro	Ala	Ile
			805						810					815	
Ala	Thr	Pro	Glu	Leu	Cys	Glu	Glu	Val	Arg	Asn	His	Leu	Tyr	Ser	
			820					825					830		
Asn	Ser	Ile	Leu	Cys	Ile	Leu	Ser	Leu	Gln	Asp	Trp	Leu	Ser	Met	Asp
		835					840					845			
Gly	Lys	Trp	Arg	Asn	Pro	Asn	Val	Gln	Glu	Glu	Arg	Ile	Asn	Ile	Pro
	850					855					860				
Ala	Asn	Pro	Arg	His	Tyr	Trp	Arg	Tyr	Arg	Met	His	Leu	Thr	Leu	Glu
865					870					875					880

Gln Leu Met Lys Ala Glu Ser Leu Asn Glu Lys Ile Arg Glu Leu Val
 885 890 895
 Lys Gln Thr Gly Arg Asn Pro Glu Lys
 900 905

<210> 9075
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 <212> PRT
 <213> B.fragilis

<400> 9075
 Asn Gln Thr Ile Asp Thr Thr Arg Ile Ile Ile Ala Leu Ile Ile Leu
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 Phe Leu Pro Glu Asp Thr Ser Ile Ile Lys Leu Met Thr Thr Gln His
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 Tyr Ile Phe Leu Glu Asn Val Arg Phe Tyr Ser Tyr His Gly Val Ala
 35 40 45
 Pro Gln Glu Thr Ala Ile Gly Asn Glu Phe Ile Ile Asn Leu Arg Leu
 50 55 60
 Lys Thr Asp Phe Gly Lys Ala Thr Glu Thr Asp Glu Val Glu Asp Thr
 65 70 75 80
 Val Ser Tyr Ala Asp Ile Tyr Ala Ala Leu Lys Glu Glu Met Glu Leu
 85 90 95
 Pro Ser Lys Leu Leu Glu His Val Cys Gly Arg Ile Val Lys Arg Leu
 100 105 110
 Phe Arg Asp Phe Arg Lys Ile Arg Glu Ile Glu Ile Lys Leu Ala Lys
 115 120 125
 Arg Asn Pro Pro Met Gly Ala Asp Ile Asp Ser Ala Gly Val Glu Met
 130 135 140
 His Cys Thr Arg Asp
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<210> 9076
 <211> 719
 <212> PRT
 <213> B.fragilis

<400> 9076
 Glu Lys Gln Met Ile Val Cys Ile Ala Glu Lys Pro Ser Val Ala Arg
 1 5 10 15
 Asp Ile Ala Asp Ile Leu Gly Ala Arg Glu Arg Lys Glu Gly Tyr Ile
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 Glu Gly Asn Gly Tyr Gln Val Thr Trp Thr Phe Gly His Leu Cys Thr
 35 40 45
 Leu Lys Glu Pro His Glu Tyr Thr Pro Gly Trp Lys Ser Trp Ser Leu
 50 55 60
 Gly Ser Leu Pro Met Ile Pro Pro Arg Phe Gly Ile Lys Leu Ile Glu
 65 70 75 80
 Asn Pro Thr Tyr Glu Lys Gln Phe His Ile Ile Glu Gly Leu Met Gln
 85 90 95
 Lys Ala Asp Glu Ile Ile Asn Cys Gly Asp Ala Gly Gln Glu Gly Glu
 100 105 110
 Leu Ile Gln Arg Trp Val Met Gln Lys Ala Gly Ala Arg Cys Pro Val
 115 120 125
 Lys Arg Leu Trp Ile Ser Ser Leu Thr Glu Glu Ala Ile Lys Glu Gly
 130 135 140
 Phe Ala Lys Leu Lys Asp Gln Lys Asp Phe Gln Pro Leu Tyr Glu Ala
 145 150 155 160
 Gly Met Ser Arg Ala Ile Gly Asp Trp Leu Leu Gly Met Asn Ala Thr

				165					170					175	
Arg	Leu	Tyr	Thr	Val	Lys	Tyr	Gly	Gln	Asn	Arg	Gln	Val	Leu	Ser	Ile
			180					185					190		
Gly	Arg	Val	Gln	Thr	Pro	Thr	Leu	Ala	Leu	Ile	Val	Asn	Arg	Gln	Leu
		195					200				205				
Asp	Ile	Glu	Asn	Phe	Gln	Pro	Lys	Gln	Tyr	Trp	Glu	Leu	Lys	Thr	Met
	210					215					220				
Tyr	Arg	Asp	Thr	Thr	Phe	Ser	Ala	Leu	Ile	Arg	Lys	Ser	Asp	Glu	Glu
	225				230					235				240	
Leu	Ala	Ala	Glu	Glu	Glu	Lys	Ser	Gly	Gly	Lys	Ala	Lys	Lys	Thr	Glu
			245					250						255	
Asn	Arg	Gly	Ile	Asp	Pro	Ile	Ala	Asn	Arg	Glu	Glu	Gly	Met	Ala	Leu
		260					265						270		
Val	Glu	Arg	Ile	Lys	Asp	Leu	Pro	Phe	Val	Val	Thr	Ser	Val	Ala	Lys
	275						280				285				
Lys	Asp	Gly	Lys	Glu	Tyr	Ala	Pro	Arg	Leu	Phe	Asp	Leu	Thr	Ser	Leu
	290					295					300				
Gln	Val	Glu	Cys	Asn	Lys	Lys	Phe	Ala	Tyr	Ser	Ala	Asp	Glu	Thr	Leu
	305				310					315				320	
Lys	Leu	Ile	Gln	Ser	Leu	Tyr	Glu	Lys	Lys	Val	Thr	Thr	Tyr	Pro	Arg
			325						330					335	
Val	Asp	Thr	Thr	Phe	Leu	Ser	Asp	Asp	Ile	Tyr	Pro	Lys	Cys	Pro	Asn
		340						345					350		
Ile	Leu	Lys	Gly	Leu	Lys	Asp	Tyr	Glu	Val	Leu	Thr	Thr	Pro	Leu	Ala
	355						360				365				
Gly	Ala	Ser	Leu	Pro	Lys	Ser	Lys	Lys	Val	Phe	Asp	Ser	Ser	Lys	Val
	370					375					380				
Thr	Asp	His	His	Ala	Ile	Ile	Pro	Thr	Gly	Val	His	Pro	Gln	Asn	Leu
	385				390					395				400	
Thr	Asp	Met	Glu	Arg	Arg	Val	Phe	Asp	Leu	Ile	Ala	Arg	Arg	Phe	Ile
			405					410						415	
Ala	Val	Phe	Tyr	Pro	Asp	Cys	Lys	Val	Ser	Thr	Thr	Thr	Val	Met	Gly
		420						425					430		
Glu	Val	Asp	Ser	Ile	Glu	Phe	Lys	Val	Thr	Gly	Lys	Gln	Ile	Leu	Glu
	435						440					445			
Pro	Gly	Trp	Arg	Val	Val	Phe	Ala	Lys	Asp	Val	Lys	Asp	Leu	Asn	Glu
	450					455					460				
Glu	Lys	Glu	Gly	Glu	Asp	Glu	Asn	Val	Leu	Pro	Ala	Phe	Val	Lys	Gly
	465				470				475					480	
Glu	Ser	Gly	Pro	His	Ile	Pro	Asp	Leu	Asn	Glu	Lys	Trp	Thr	Gln	Pro
			485					490						495	
Pro	Lys	Pro	Tyr	Thr	Glu	Ala	Thr	Leu	Leu	Arg	Ala	Met	Glu	Thr	Ala
		500						505					510		
Gly	Lys	Leu	Val	Asp	Asn	Asp	Glu	Leu	Arg	Asp	Ala	Leu	Lys	Glu	Asn
	515						520					525			
Gly	Ile	Gly	Arg	Pro	Ser	Thr	Arg	Ala	Ala	Ile	Ile	Glu	Thr	Leu	Phe
	530					535					540				
Lys	Arg	Asn	Tyr	Ile	Arg	Lys	Glu	Lys	Lys	Asn	Leu	Ile	Ala	Thr	Pro
	545				550					555				560	
Thr	Gly	Val	Glu	Leu	Ile	Gln	Leu	Ile	His	Glu	Glu	Leu	Leu	Lys	Ser
			565						570					575	
Ala	Glu	Leu	Thr	Gly	Ile	Trp	Glu	Lys	Lys	Leu	Arg	Glu	Ile	Glu	Lys
		580					585						590		
Lys	Thr	Tyr	Asp	Ala	Arg	Gln	Phe	Leu	Glu	Glu	Leu	Lys	Gln	Met	Val
	595						600					605			
Ser	Glu	Ile	Val	Asn	Ser	Val	Leu	Ser	Asp	Asn	Thr	Asn	Arg	Arg	Ile
	610					615					620				
Thr	Ile	Gln	Glu	Ala	Thr	Ala	Val	Glu	Glu	Glu	Lys	Lys	Lys	Lys	Glu
	625				630				635					640	

165 170 175
 180 185 190
 195 200 205
 210 215 220
 225 230 235
 245 250 255
 260 265 270
 275 280 285
 290 295 300
 305 310 315
 325 330 335
 340 345 350
 355 360 365
 370 375 380
 385 390 395
 405 410 415
 420 425 430
 435 440 445
 450 455 460
 465 470 475
 485 490 495
 500 505 510
 515 520 525
 530 535 540
 545 550 555
 565 570 575
 580 585 590
 595 600 605
 610 615 620
 625 630 635 640

Pro Lys Arg Arg Glu Arg Lys Ser Ala Thr Pro Lys Glu Lys Lys Gly
 645 650 655
 Lys Ser Glu Pro Ala Thr Val Asp Val Ser Ser Thr Gly Gln Ser Val
 660 665 670
 Arg Ala Asp Ala Leu Lys Glu Thr Asp Ser Leu Val Gly Lys Leu Cys
 675 680 685
 Pro Val Cys Gly Lys Gly Val Ile Ile Lys Gly Lys Thr Val Tyr Gly
 690 695 700
 Cys Ser Glu Trp Lys Asn Gly Cys Thr Tyr Arg Lys Ala Phe Glu
 705 710 715

<210> 9077

<211> 385

<212> PRT

<213> B.fragilis

<400> 9077

Asn Ala Lys Ile Thr Gln Thr Ile Met Ala Gly Ile Tyr Ile His Val
 1 5 10 15
 Pro Phe Cys Lys Thr Arg Cys Ile Tyr Cys Asp Phe Tyr Ser Thr Thr
 20 25 30
 Arg Ser Glu Trp Lys Gly Arg Tyr Ile Glu Ala Leu Cys Lys Glu Leu
 35 40 45
 Glu Met Arg Tyr Thr Tyr Leu Lys Gly Lys Pro Ile Glu Thr Leu Tyr
 50 55 60
 Phe Gly Gly Gly Thr Pro Ser Gln Leu Asp Glu Lys Asp Phe Arg Lys
 65 70 75 80
 Val Phe Asp Thr Val Arg Arg Val Tyr Gly Met Glu Asn Cys His Glu
 85 90 95
 Ile Thr Leu Glu Ala Asn Pro Asp Asp Leu Cys Pro Glu Tyr Leu Gln
 100 105 110
 Met Leu Ser Glu Leu Pro Phe Asn Arg Ile Ser Met Gly Ile Gln Thr
 115 120 125
 Phe Asp Asp Thr Thr Leu Lys Leu Leu Lys Arg Arg His Asn Ala Ala
 130 135 140
 Gln Ala Ile Arg Ala Val Glu Leu Cys Arg Ala His Gly Phe Leu Asn
 145 150 155 160
 Ile Ser Ile Asp Leu Ile Tyr Gly Leu Pro Gly Glu Thr Thr Glu Arg
 165 170 175
 Trp Glu Lys Asp Leu Gln Gln Ala Ile Ala Leu Asp Val Glu His Ile
 180 185 190
 Ser Ala Tyr His Leu Ile Tyr Glu Glu Gly Thr Pro Ile Tyr Lys Met
 195 200 205
 Leu Gln Lys His Gln Val Glu Glu Val Asp Glu Asp Ser Ser Val Arg
 210 215 220
 Phe Phe Thr Leu Leu Ile Asp Arg Leu Arg Glu Ala Gly Tyr Glu His
 225 230 235 240
 Tyr Glu Ile Ser Asn Phe Cys Lys Pro Gly Met Tyr Ser Arg His Asn
 245 250 255
 Thr Ser Tyr Trp Gln Gly Val Ser Tyr Leu Gly Cys Gly Pro Ser Ala
 260 265 270
 His Ser Phe Asp Gly Gln Thr Arg Glu Trp Asn Cys Ser Ser Ile Glu
 275 280 285
 Lys Tyr Met Ser Gly Ile Glu Ser Gly Gln Arg Asp Phe Glu Arg Glu
 290 295 300
 Glu Arg Asp Leu Ala Thr Arg Tyr Asn Glu Phe Ile Ile Thr Ser Val
 305 310 315 320
 Arg Thr Gln Trp Gly Ile Ser Leu Glu Arg Leu Ser Asn Asp Tyr Gly
 325 330 335

Thr Gln Leu Glu Gln Tyr Cys Leu Lys Met Ala Arg Pro Ser Leu Glu
 340 345 350
 Asn Gly Lys Leu Glu Ile Tyr Glu Gly Ala Leu Arg Leu Thr Arg Glu
 355 360 365
 Gly Ile Phe Ile Ser Asp Ser Ile Met Ser Asp Leu Leu Trp Val Glu
 370 375 380
 Asn
 385

<210> 9078
 <211> 155
 <212> PRT
 <213> B.fragilis

<400> 9078
 His Asp Glu Ile Arg Arg Lys Ser Met Glu Ile Ile Leu Lys Glu Asp
 1 5 10 15
 Val Val Asn Leu Gly Tyr Lys Asn Asp Ile Val Thr Val Lys Ser Gly
 20 25 30
 Tyr Gly Arg Asn Tyr Leu Ile Pro Thr Gly Lys Ala Val Ile Ala Ser
 35 40 45
 Pro Ser Ala Lys Lys Met Leu Ala Glu Glu Leu Lys Gln Arg Ala His
 50 55 60
 Lys Leu Glu Lys Ile Lys Lys Asp Ala Glu Ala Leu Ala Ala Lys Leu
 65 70 75 80
 Glu Gly Val Ser Leu Thr Ile Ala Thr Lys Val Ser Ser Thr Gly Thr
 85 90 95
 Ile Phe Gly Ser Val Gly Asn Ile Gln Ile Ala Glu Glu Leu Ala Lys
 100 105 110
 Leu Gly His Glu Ile Asp Arg Lys Ile Ile Val Val Lys Asp Ala Val
 115 120 125
 Lys Glu Val Gly Ala Tyr Lys Ala Ile Val Lys Leu His Lys Glu Val
 130 135 140
 Ser Val Glu Ile Pro Phe Glu Val Val Ala Glu
 145 150 155

<210> 9079
 <211> 334
 <212> PRT
 <213> B.fragilis

<400> 9079
 Phe Ile Glu Met Lys Leu Pro Gly Lys Ile Ala Ile Met Gly Gly Gly
 1 5 10 15
 Ser Trp Ala Thr Ala Ile Ala Lys Met Cys Leu Ala Gln Glu Glu Ser
 20 25 30
 Ile Asn Trp Tyr Met Arg Arg Asp Asp Arg Ile Ala Asp Phe Lys Arg
 35 40 45
 Leu Gly His Asn Pro Ala Tyr Leu Thr Gly Val Lys Phe Asp Met Lys
 50 55 60
 Arg Ile Asn Phe Ser Ser Asn Ile Asn Asp Val Val Lys Glu Ser Asp
 65 70 75 80
 Thr Leu Ile Phe Val Thr Pro Ser Pro Tyr Leu Lys Ala His Leu Lys
 85 90 95
 Lys Leu Lys Thr Arg Ile Arg Asp Lys Phe Ile Ile Thr Ala Ile Lys
 100 105 110
 Gly Ile Val Pro Asp Asp Asn Leu Ile Val Ser Glu Tyr Phe Asn Lys
 115 120 125
 Glu Tyr Gly Val Pro Pro Glu Asn Ile Ala Val Leu Ala Gly Pro Cys

130 135 140
 His Ala Glu Glu Val Ala Leu Glu Arg Leu Ser Tyr Leu Thr Ile Ala
 145 150 155 160
 Cys Pro Asp Lys Asp Lys Ala Arg Val Phe Ala Arg Arg Leu Gly Ser
 165 170 175
 Ser Phe Ile Lys Thr Ser Val Ser Asp Val Ile Gly Ile Glu Tyr
 180 185 190
 Ser Ser Val Leu Lys Asn Val Tyr Ala Ile Ala Ala Gly Ile Cys Ser
 195 200 205
 Gly Leu Lys Tyr Gly Asp Asn Phe Gln Ala Val Leu Ile Ser Asn Ala
 210 215 220
 Ile Gln Glu Met Asn Arg Phe Leu Asn Thr Val His Pro Ile Asn Arg
 225 230 235 240
 Asn Val Asp Glu Ser Val Tyr Leu Gly Asp Leu Leu Val Thr Gly Tyr
 245 250 255
 Ser Asn Phe Ser Arg Asn Arg Thr Phe Gly Thr Met Ile Gly Lys Gly
 260 265 270
 Tyr Ser Val Lys Ser Ala Gln Ile Glu Met Glu Met Ile Ala Glu Gly
 275 280 285
 Tyr Tyr Gly Thr Lys Cys Ile Lys Glu Ile Asn Lys His His His Val
 290 295 300
 Asn Met Pro Ile Leu Asp Ala Val Tyr Asn Ile Leu Tyr Glu Arg Ile
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 Ser Pro Met Ile Glu Ile Lys Leu Leu Thr Asp Ser Phe Arg
 325 330

<210> 9080
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 <212> PRT
 <213> B.fragilis

<400> 9080
 Phe Ser Gly Ile Thr Ile Lys Lys Val Gly Ile Met Lys Arg Leu Gly
 1 5 10 15
 Leu Thr Leu Val Ala Ala Leu Cys Leu Val Ala Thr Thr Phe Ala Ala
 20 25 30
 Gly Asn Gln Pro Thr Val Ala Lys Trp Glu Gly Asn Ile Asn Val Asn
 35 40 45
 Lys Leu Gly Lys Tyr Leu Asn Leu Ser Ser Val Gln Ala Glu Glu Val
 50 55 60
 Ala Asn Ile Cys Asn Tyr Phe Asp Glu Gln Met Gly Arg Ala Thr Thr
 65 70 75 80
 Ala Lys Lys Asn Lys Asp Thr Met Val Arg Asn Ala Val Tyr Gly Asn
 85 90 95
 Leu Lys Leu Met Lys Lys Thr Leu Thr Asp Ala Gln Tyr Thr Lys Tyr
 100 105 110
 Thr Thr Ile Leu Asn Met Thr Leu Lys Asn Lys Gly Ile Glu Val Lys
 115 120 125

<210> 9081
 <211> 261
 <212> PRT
 <213> B.fragilis

<400> 9081
 Asp Arg Met Ile Ile Leu Phe Ile Ser Leu Gln Lys Lys Asp Met Met
 1 5 10 15
 Asp Thr Val Lys Asn Arg Arg Thr Ile Arg Lys Tyr Gln Gln Lys Asp
 20 25 30

Ile Thr Pro Asp Leu Leu Asn Asp Leu Leu Glu Thr Ser Phe Arg Ala
 35 40 45
 Ser Thr Met Gly Gly Met Gln Leu Tyr Ser Val Val Val Thr Arg Asp
 50 55 60
 Ala Glu Lys Lys Glu Ile Leu Ser Pro Ala His Phe Asn Gln Pro Met
 65 70 75 80
 Val Lys Glu Ala Pro Val Val Leu Thr Phe Cys Ala Asp Phe Arg Arg
 85 90 95
 Phe Cys Lys Tyr Cys Gln Glu Arg Asn Ala Glu Pro Gly Tyr Gly Asn
 100 105 110
 Leu Met Ser Phe Leu Asn Ala Ala Met Asp Thr Leu Leu Val Ala Gln
 115 120 125
 Thr Phe Cys Thr Leu Ala Glu Glu Ala Gly Leu Gly Ile Cys Tyr Leu
 130 135 140
 Gly Thr Thr Thr Tyr Asn Pro Gln Met Ile Ile Asp Ala Leu His Leu
 145 150 155 160
 Pro Glu Leu Val Phe Pro Ile Thr Thr Val Thr Val Gly Tyr Pro Ala
 165 170 175
 Glu Ser Pro Lys Gln Val Asp Arg Leu Pro Ile Glu Gly Ile Ile His
 180 185 190
 Glu Glu Ser Tyr His Asp Tyr Thr Ala Glu Asp Ile Asn Arg Leu Tyr
 195 200 205
 Ala Tyr Lys Glu Ser Leu Pro Glu Asn Lys Leu Phe Ile Glu Glu Asn
 210 215 220
 Gln Lys Glu Thr Leu Ala Gln Val Phe Thr Asp Val Arg Tyr Thr Lys
 225 230 235 240
 Lys Asp Asn Glu Phe Met Ser Glu Asn Leu Leu Lys Val Leu Arg Arg
 245 250 255
 Gln Gly Phe Met Asp
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<210> 9082

<211> 173

<212> PRT

<213> B.fragilis

<400> 9082

Ser Phe Phe Val Leu Arg Asp Arg Ile Cys Gln Arg Arg His Leu Ser
 1 5 10 15
 Leu Gln Ser Cys Leu Asn Asn Asn Phe Met Ile Glu Gln Phe Asn Phe
 20 25 30
 Asp Ile Arg Leu Ile Phe Ala Ile Leu Asn Gly Lys Val Ser Ala Ala
 35 40 45
 Ile Asn Arg Lys Leu Tyr Arg Asn Phe Arg Gln Asn Gly Leu Glu Ile
 50 55 60
 Ser Pro Glu Gln Trp Thr Val Leu Ile Phe Leu Trp Glu Lys Asp Gly
 65 70 75 80
 Val Thr Gln Gln Glu Leu Cys Asn Ala Thr Phe Lys Asp Lys Pro Ser
 85 90 95
 Met Thr Arg Leu Ile Asp Asn Met Glu Arg Gln His Leu Val Val Arg
 100 105 110
 Ile Ser Asp Lys Lys Asp Arg Arg Thr Asn Leu Ile His Leu Thr Arg
 115 120 125
 Thr Gly Lys Glu Leu Glu Glu Lys Ala Arg Ile Ile Ala Asn Arg Thr
 130 135 140
 Leu Lys Glu Ala Leu His Gly Ile Thr Val Glu Glu Leu Ser Val Ser
 145 150 155 160
 Gln Glu Val Leu Arg Lys Ile Phe Phe Asn Thr Lys Asp
 165 170

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<210> 9083
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 <213> B.fragilis

<400> 9083

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Tyr	Trp	Tyr	Phe	Phe	Ser	Leu	Leu	Ala	Phe	Gly	Tyr	Met	Phe	Gln	Ala
			20					25					30		
Cys	Asp	Asn	Ser	Lys	Thr	Tyr	Ala	Glu	Met	Leu	Asp	Glu	Glu	Lys	Asp
		35					40					45			
Ala	Val	Asn	Ala	Phe	Ile	Lys	Lys	His	Asn	Ile	Gln	Thr	Ile	Ser	Glu
	50					55					60				
Ser	Asp	Phe	Glu	Ala	Asn	Gly	Tyr	Lys	Thr	Asp	Thr	Thr	Lys	Asn	Glu
65					70					75					80
Tyr	Val	Ala	Phe	Ser	Asn	Gly	Val	Tyr	Met	Gln	Ile	Val	Asp	Lys	Gly
				85					90					95	
Ile	Val	Thr	Asp	Lys	Pro	Glu	Asn	Asp	Ser	Ile	Lys	Asn	Asn	Asn	Ile
			100					105					110		
Val	Ala	Val	Arg	Phe	Val	Glu	His	Asp	Ile	Lys	Ala	Asn	Asp	Thr	Thr
		115					120						125		
Cys	Phe	Asn	Val	Val	Leu	Pro	Gly	Phe	Glu	Asn	Tyr	Pro	Asn	Tyr	Tyr
	130					135					140				
Thr	Tyr	Pro	Asp	Val	Phe	Arg	Tyr	Val	Asp	Asn	Gly	Thr	Ser	Val	Ala
145					150					155					160
Gly	Val	Phe	Thr	Glu	Gly	Ser	Met	Tyr	Ala	Lys	Tyr	Gly	Thr	Thr	Asp
				165					170					175	
Val	Pro	Pro	Gly	Trp	Leu	Leu	Ala	Leu	Lys	Tyr	Val	Thr	Asn	Tyr	Ala
			180				185						190		
His	Val	Arg	Met	Ile	Val	Pro	Ser	Lys	Met	Gly	His	Gln	Ser	Ala	Asn
		195				200						205			
Gln	Tyr	Val	Asn	Pro	Tyr	Phe	Tyr	Asp	Ile	Arg	Lys	Phe	Gln	Lys	Ala
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Leu	Asn														
225															

<210> 9084
 <211> 154
 <212> PRT
 <213> B.fragilis

<400> 9084

Arg	Val	His	Val	Pro	His	Glu	Gln	Gly	Pro	Leu	Thr	Val	Ser	Tyr	Ala
1				5					10					15	
Arg	Asp	Val	Arg	Val	Ile	Val	Tyr	Glu	Glu	Lys	Met	His	Arg	Val	Asp
		20						25					30		
Ser	Asn	Glu	Ile	Ser	Phe	Met	Leu	Ala	Glu	Arg	Asn	Ala	Phe	Ser	Glu
		35				40						45			
Ala	Phe	Lys	Asn	Ala	Gly	Pro	Lys	Ile	Leu	Glu	Pro	Ile	Tyr	Asp	Val
	50					55					60				
Glu	Val	Phe	Val	Pro	Ser	Asp	Lys	Met	Gly	Asp	Val	Met	Gly	Asp	Leu
65					70					75					80
Gln	Gly	Arg	Arg	Ala	Met	Ile	Met	Gly	Met	Ser	Ser	Glu	Asn	Gly	Tyr
				85					90					95	
Glu	Lys	Leu	Val	Ala	Lys	Val	Pro	Leu	Lys	Glu	Met	Ser	Ser	Tyr	Ser
			100					105					110		
Thr	Ala	Leu	Ser	Ser	Leu	Thr	Gly	Gly	Arg	Ala	Ser	Phe	Ile	Met	Lys

115	120	125
Phe Ala Ser Tyr Glu Leu Val Pro Ser Asp Val Gln Asp Lys Leu Ile		
130	135	140
Lys Asp Phe Glu Ser Lys Gln Thr Glu Glu		
145	150	

<210> 9085

<211> 527

<212> PRT

<213> B.fragilis

<400> 9085

Leu Gly Ser Val Asn Phe Val Ala Met Lys Lys Ser Thr Ile Trp Ile		
1	5	10 15
Leu Gly Ile Ile Met Gly Leu Ser Phe Leu Ser Leu Leu Tyr Leu Gln		
	20	25 30
Val Ser Tyr Ile Glu Glu Met Val Lys Met Arg Lys Glu Gln Phe Asn		
	35	40 45
Thr Ser Val Arg Asn Ala Leu Phe Gln Val Ser Lys Asp Val Glu Tyr		
	50	55 60
Asp Glu Thr Gln Arg Trp Leu Leu Glu Asp Ile Thr Glu Ala Glu Arg		
65	70	75 80
Arg Ala Leu Ala Gln Ser Ser Ser Thr Thr Glu Gln Lys Asn Gly Leu		
	85	90 95
Ile Gln Gln Ser Glu Arg Tyr Arg Phe Lys Ser Pro Asp Gly Thr Leu		
	100	105 110
Tyr Ser Glu Phe Glu Leu Lys Met Ile Thr Thr Glu Pro Ser Lys Val		
	115	120 125
Pro Lys Ala Met Ile Ser Glu Arg His Gly Arg Asn Thr Ile Pro Gln		
	130	135 140
Thr Ser Arg Ser Leu Thr Asp Ala Ile Lys Asn Arg Tyr Met Tyr Gln		
145	150	155 160
Arg Phe Leu Leu Asp Asp Val Ala Leu Arg Met Ile Tyr Lys Ala Ser		
	165	170 175
Asp Lys Ser Ile Gly Glu Arg Val Asn Phe Lys Lys Leu Asp Asn Tyr		
	180	185 190
Leu Lys Ser Asn Phe Ile Asn Asn Gly Val Glu Leu Leu Tyr His Phe		
	195	200 205
Ser Val Ile Asp Lys Asp Gly Arg Glu Val Tyr Arg Cys Ser Asp Tyr		
	210	215 220
Glu Asp Gly Gly Ser Glu Asp Ser Tyr Thr Gln Pro Leu Phe Gln Asn		
225	230	235 240
Asp Pro Pro Ala Lys Met Ser Ile Val Lys Val His Phe Pro Gly Lys		
	245	250 255
Lys Asp Tyr Ile Phe Asp Ser Val Ser Phe Met Ile Pro Ser Met Ile		
	260	265 270
Phe Thr Ile Val Leu Leu Ile Thr Phe Ile Phe Thr Ile Tyr Ile Val		
	275	280 285
Phe Arg Gln Lys Lys Leu Thr Glu Met Lys Asn Asp Phe Ile Asn Asn		
	290	295 300
Met Thr His Glu Phe Lys Thr Pro Ile Ser Thr Ile Ser Leu Ala Ala		
305	310	315 320
Gln Met Leu Lys Asp Pro Ala Val Gly Lys Ser Pro Gln Met Phe Gln		
	325	330 335
His Ile Ser Gly Val Ile Asn Asp Glu Thr Lys Arg Leu Arg Phe Gln		
	340	345 350
Val Glu Lys Val Leu Gln Met Ser Met Phe Asp Arg Gln Lys Ala Thr		
	355	360 365
Leu Lys Met Lys Glu Leu Asp Ala Asn Glu Leu Ile Thr Gly Val Ile		

115 120 125
 130 135 140
 145 150
 160 165 170
 175 180 185
 190 195 200
 205 210 215
 220 225 230
 235 240 245
 250 255 260
 265 270 275
 280 285 290
 295 300 305
 310 315 320
 325 330 335
 340 345 350
 355 360 365

370	Asn Thr Phe Ala Leu Lys	375	Val Glu Arg Tyr Asn Gly Lys Ile Thr Ser	380	
385		390		395	400
	Asn Leu Glu Ala Thr Asn Pro Val Ile Phe Ala Asp Glu Met His Ile				
	405		410		415
	Thr Asn Val Ile Phe Asn Leu Met Asp Asn Ala Val Lys Tyr Lys Lys				
	420		425		430
	Pro Glu Glu Asp Leu Val Leu Asn Val Arg Thr Trp Asn Glu Pro Gly				
	435		440		445
	Lys Leu Met Ile Ser Ile Gln Asp Asn Gly Ile Gly Ile Lys Lys Glu				
	450		455		460
	Asn Leu Lys Lys Val Phe Asp Lys Phe Tyr Arg Val His Thr Gly Asn				
	465		470		475
	Leu His Asp Val Lys Gly Phe Gly Leu Gly Leu Ala Tyr Val Lys Lys				
	485		490		495
	Ile Ile Gln Asp His Lys Gly Thr Ile Arg Ala Glu Ser Glu Leu Asn				
	500		505		510
	Val Gly Thr Lys Phe Ile Ile Ala Leu Pro Leu Leu Lys Asn Asp				
	515		520		525

<210> 9086

<211> 488

<212> PRT

<213> B.fragilis

<400> 9086

Lys Phe Cys Leu Ile Asn Lys Cys Ile Thr Ala Ala Met Ser Glu Ser	
1 5 10 15	
Ser His Val Gly Leu Trp Asn Arg Cys Leu Glu Ile Ile Arg Asp Asn	
20 25 30	
Val Pro Glu Ser Thr Tyr Lys Thr Trp Phe Val Pro Ile Val Pro Leu	
35 40 45	
Lys Tyr Glu Asp Lys Thr Leu Ile Val Gln Val Pro Ser Gln Phe Phe	
50 55 60	
Tyr Glu Phe Leu Glu Asp Lys Phe Val Asp Leu Leu Arg Lys Thr Leu	
65 70 75 80	
Tyr Lys Val Ile Gly Asp Gly Thr Lys Leu Met Tyr Asn Val Leu Val	
85 90 95	
Asp Lys Ser Ser Gly Ala Thr Val Asn Gln Glu Ser Thr Thr Arg Ser	
100 105 110	
Thr Ala Ile Pro Gln Ser Gly Leu Pro Arg Val Asp Glu Arg Lys Ala	
115 120 125	
Pro Gly Leu Leu Arg Ala Pro Ala Val Gln Asp Leu Asp Pro His Leu	
130 135 140	
Asn Pro Asn Tyr Asn Phe Glu Thr Phe Ile Glu Gly Tyr Ser Asn Lys	
145 150 155 160	
Leu Ser Arg Ser Val Ala Glu Ala Val Ala Glu Asn Pro Ala Lys Thr	
165 170 175	
Val Phe Asn Pro Leu Phe Leu His Gly Ala Ser Gly Val Gly Lys Thr	
180 185 190	
His Leu Ala Asn Ala Ile Gly Thr Arg Ile Lys Glu Leu Tyr Pro Asp	
195 200 205	
Lys Arg Val Leu Tyr Val Ser Ala His Leu Phe Gln Val Gln Tyr Thr	
210 215 220	
Asp Ser Val Arg Asn Asn Thr Thr Asn Asp Phe Ile Asn Phe Tyr Gln	
225 230 235 240	
Thr Ile Asp Val Leu Ile Ile Asp Asp Ile Gln Glu Phe Ala Gly Val	
245 250 255	
Thr Lys Thr Gln Asn Thr Phe Phe His Ile Phe Asn His Leu His Gln	

260 265 270
 Asn Gly Lys Gln Leu Ile Leu Thr Ser Asp Arg Ala Pro Val Leu Leu
 275 280 285
 Gln Gly Met Glu Glu Arg Leu Leu Thr Arg Phe Lys Trp Gly Met Val
 290 295 300
 Ala Glu Leu Glu Lys Pro Thr Val Glu Leu Arg Lys Asn Ile Leu Arg
 305 310 315 320
 Asn Lys Ile His Arg Asp Gly Leu Gln Phe Pro Ser Glu Val Ile Asp
 325 330 335
 Tyr Ile Ala Glu Asn Val Asn Glu Ser Val Arg Asp Leu Glu Gly Ile
 340 345 350
 Val Ile Ser Ile Met Ala His Ser Thr Ile Tyr Asn Lys Glu Ile Asp
 355 360 365
 Leu Asp Leu Ala Gln Arg Ile Val Arg Lys Val Val Arg Cys Glu Thr
 370 375 380
 Lys Ala Val Thr Ile Asp Asp Ile Ile Asn Val Val Cys Lys His Phe
 385 390 395 400
 Asp Leu Glu Ser Ser Ala Ile His Thr Lys Ser Arg Lys Arg Glu Val
 405 410 415
 Val Gln Ala Arg Gln Val Ala Met Tyr Leu Ala Lys Thr His Thr Asp
 420 425 430
 Phe Ser Thr Ser Lys Ile Gly Lys Phe Ile Gly Asn Lys Asp His Ala
 435 440 445
 Thr Val Leu His Ala Cys Lys Thr Val Lys Gly Gln Cys Glu Val Asp
 450 455 460
 Lys Gly Phe Arg Ser Asp Leu Glu Asn Ile Glu Thr Leu Leu Lys Lys
 465 470 475 480
 Arg Asn Val Ser Asn Gly Glu Arg
 485

<210> 9087

<211> 221

<212> PRT

<213> B.fragilis

<400> 9087

Pro Met Asn Val Gln Ile Glu Glu Ser Trp Lys Thr His Leu Glu Pro
 1 5 10 15
 Glu Phe Glu Lys Asp Tyr Phe Arg Thr Leu Thr Glu Phe Val Arg Ser
 20 25 30
 Glu Tyr Ser Gln Tyr Gln Ile Phe Pro Pro Gly Lys Leu Ile Phe Asn
 35 40 45
 Ala Phe Asn Leu Cys Pro Phe Asp Lys Val Lys Val Val Ile Ile Gly
 50 55 60
 Gln Asp Pro Tyr His Gly Pro Gly Gln Ala His Gly Leu Cys Phe Ser
 65 70 75 80
 Val Asn Asp Gly Val Ala Phe Pro Pro Ser Leu Val Asn Ile Phe Lys
 85 90 95
 Glu Ile Lys Glu Asp Ile Gly Thr Pro Ala Pro Ser Thr Gly Asn Leu
 100 105 110
 Thr Arg Trp Ala Glu Gln Gly Val Leu Leu Leu Asn Ala Thr Leu Thr
 115 120 125
 Val Arg Ala His Gln Ala Gly Ser His Gln Arg Arg Gly Trp Glu Glu
 130 135 140
 Phe Thr Asp Ala Ala Ile Arg Val Leu Ala Glu Arg Glu Asn Leu
 145 150 155 160
 Val Phe Ile Leu Trp Gly Ser Tyr Ala Gln Lys Lys Gly Ala Phe Ile
 165 170 175
 Asp Arg Asn Lys His Leu Val Leu Ser Ser Ala His Pro Ser Pro Leu

	180		185		190
Ser	Ala	Tyr	Asn	Gly	Phe
	195			200	
Glu	Tyr	Leu	Lys	Ala	His
	210			215	
					220

<210> 9088
 <211> 176
 <212> PRT
 <213> B.fragilis

<400> 9088

Lys	Asp	Asp	Val	Met	Glu	Lys	Leu	Ile	Arg	Arg	Ile	Gly	Leu	Val	Ala
1				5					10					15	
His	Asp	Ala	Met	Lys	Lys	Asp	Leu	Ile	Glu	Trp	Val	Leu	Trp	Asn	Ser
			20					25					30		
Glu	Leu	Leu	Met	Gly	His	Lys	Phe	Tyr	Cys	Thr	Gly	Thr	Thr	Gly	Thr
		35					40					45			
Leu	Ile	Gln	Glu	Ala	Leu	Lys	Glu	Lys	His	Pro	Asp	Val	Glu	Trp	Asp
	50					55					60				
Phe	Thr	Ile	Leu	Lys	Ser	Gly	Pro	Leu	Gly	Gly	Asp	Gln	Gln	Met	Gly
65					70					75					80
Ser	Arg	Ile	Val	Asp	Gly	Glu	Ile	Asp	Tyr	Leu	Phe	Phe	Phe	Thr	Asp
				85					90					95	
Pro	Met	Thr	Leu	Gln	Pro	His	Asp	Thr	Asp	Val	Lys	Ala	Leu	Thr	Arg
			100					105						110	
Leu	Ala	Ser	Val	Glu	Asn	Ile	Val	Phe	Cys	Cys	Asn	Arg	Ser	Thr	Ala
		115					120					125			
Asp	His	Ile	Ile	Ser	Ser	Pro	Leu	Phe	Leu	Asp	Pro	Asp	Tyr	Glu	Arg
	130					135					140				
Thr	His	Pro	Asp	Tyr	Ser	Gly	Tyr	Thr	Lys	Arg	Phe	Glu	Asn	Lys	Pro
145					150					155					160
Val	Val	Thr	Glu	Ala	Val	Glu	Ser	Val	Lys	Lys	Arg	Lys	Arg	Lys	Lys
				165					170					175	

<210> 9089
 <211> 189
 <212> PRT
 <213> B.fragilis

<400> 9089

Asn	Tyr	Lys	Val	Met	Thr	Glu	Ser	Glu	Val	Arg	Lys	Leu	Leu	Arg	Arg
1				5					10					15	
Met	Lys	Glu	Leu	Asp	Ser	Gln	Thr	Ala	Phe	Arg	Ala	Phe	Tyr	Asp	Met
			20					25					30		
Thr	Tyr	Asp	Arg	Leu	Tyr	Arg	Ile	Ala	Tyr	Tyr	Tyr	Val	Lys	Arg	Glu
		35					40					45			
Glu	Trp	Ser	Gln	Glu	Ile	Val	Leu	Asp	Val	Phe	Leu	Lys	Leu	Trp	Glu
	50					55					60				
Gln	Arg	Ser	Ser	Leu	Pro	Glu	Val	Lys	Ser	Ile	Glu	Asp	Tyr	Cys	Phe
65					70					75					80
Ile	Leu	Val	Lys	Asn	Ala	Ser	Leu	Asn	Tyr	Leu	Glu	Lys	Glu	Asn	Arg
			85						90					95	
Arg	Thr	Thr	Val	Ser	Thr	Glu	Thr	Leu	Pro	Glu	Pro	Glu	Ala	Gln	Ser
			100					105					110		
Asp	Ser	Pro	Glu	Glu	Ser	Met	Ile	Ser	Glu	Glu	Leu	Phe	Ala	Ile	Tyr
		115					120					125			
Val	Lys	Ala	Leu	Asp	Arg	Leu	Pro	Glu	Arg	Cys	Arg	Glu	Val	Phe	Ile
130						135					140				

Arg Ile Arg Glu Glu Lys Gln Ser Tyr Ala Gln Val Ala Glu Glu Leu
 145 150 155 160
 Gly Ile Ser Thr Lys Thr Val Asp Ala Gln Leu Gln Lys Ala Thr Ile
 165 170 175
 Arg Leu Lys Glu Ala Ile Ser Met Val Asn Asn Asp Arg
 180 185

<210> 9090

<211> 179

<212> PRT

<213> B.fragilis

<400> 9090

Asn Met Lys Val Leu Asp Leu Ile Asp Lys Tyr Tyr Pro Gln Asp Asn
 1 5 10 15
 Glu Leu Lys His Ile Leu Asn Val His Ser Arg Ser Val Ala Asp Lys
 20 25 30
 Ala Leu Trp Ile Ala Gly Lys His Pro Glu Leu Asn Leu Asp Thr Val
 35 40 45
 Phe Leu Glu Glu Ala Ala Met Leu His Asp Ile Gly Ile Phe Leu Thr
 50 55 60
 His Ala Pro Gly Ile Gln Cys Phe Gly Thr Glu Pro Tyr Ile Cys His
 65 70 75 80
 Gly Tyr Leu Gly Ala Gly Leu Val Arg Lys Glu Gly Phe Pro Arg His
 85 90 95
 Ala Leu Val Cys Glu Arg His Thr Gly Ala Gly Leu Ser Leu Lys Asp
 100 105 110
 Ile Met Asp Gln Lys Leu Pro Val Pro His Arg Glu Met Leu Pro Val
 115 120 125
 Ser Met Glu Glu Gln Val Ile Cys Phe Ala Asp Lys Phe Phe Ser Lys
 130 135 140
 Thr His Leu Asp Arg Glu Lys Thr Val Glu Gly Ala Arg Lys Ser Ile
 145 150 155 160
 Ala Lys Tyr Gly Asp Glu Gly Leu Gln Arg Phe Asn Asn Trp Cys Lys
 165 170 175
 Leu Phe Leu

<210> 9091

<211> 375

<212> PRT

<213> B.fragilis

<400> 9091

Asn Asp Gln Phe Asp Asn Ile Leu Ala Tyr Cys Ser Tyr Arg Tyr Arg
 1 5 10 15
 Tyr Tyr Ser Tyr Leu Cys Arg Gln Ile Thr Ile Asn Lys Pro Met Ser
 20 25 30
 Tyr Leu Ile Lys Pro Gln Asn Tyr Lys Pro Leu Leu Asp Leu Lys Gln
 35 40 45
 Thr Glu Leu Gly Ile Lys Gln Ile Lys Glu Phe Phe Gln Leu Asn Leu
 50 55 60
 Ser Ser Glu Leu Arg Leu Arg Arg Val Thr Ala Pro Leu Phe Val Leu
 65 70 75 80
 Lys Gly Met Gly Ile Asn Asp Asp Leu Asn Gly Ile Glu Arg Pro Val
 85 90 95
 Ser Phe Pro Ile Lys Asp Leu Gly Asp Ala Gln Ala Glu Val Val His
 100 105 110
 Ser Leu Ala Lys Trp Lys Arg Leu Thr Leu Ala Asp Tyr His Ile Glu

115 120 125
 Pro Gly Tyr Gly Ile Tyr Thr Asp Met Asn Ala Ile Arg Ser Asp Glu
 130 135 140
 Glu Leu Gly Asn Leu His Ser Leu Tyr Val Asp Gln Trp Asp Trp Glu
 145 150 155 160
 Arg Val Ile Thr Ala Glu Asp Arg Asn Ala Asp Phe Leu Lys Glu Ile
 165 170 175
 Val Asn Arg Ile Tyr Ala Ala Met Ile Arg Thr Glu Tyr Met Val Tyr
 180 185 190
 Glu Met Tyr Pro Gln Ile Lys Pro Cys Leu Pro Gln Lys Leu His Phe
 195 200 205
 Ile His Ser Glu Glu Leu Arg Gln Leu Tyr Pro Asp Met Glu Pro Lys
 210 215 220
 Cys Arg Glu His Ala Ile Cys Lys Lys Tyr Gly Ala Val Phe Ile Ile
 225 230 235 240
 Gly Ile Gly Cys Lys Leu Ser Asp Gly Lys Lys His Asp Gly Arg Ala
 245 250 255
 Pro Asp Tyr Asp Asp Tyr Thr Ser Lys Gly Leu Asn Asp Leu Pro Gly
 260 265 270
 Leu Asn Gly Asp Leu Leu Leu Trp Asp Asp Val Leu Gln Arg Ser Ile
 275 280 285
 Glu Leu Ser Ser Met Gly Ile Arg Val Asp Lys Glu Ala Leu Leu Arg
 290 295 300
 Gln Val Lys Gln Glu Asn Gln Glu Gln Arg Leu Glu Leu Tyr Phe His
 305 310 315 320
 Lys Arg Leu Leu Asn Asp Thr Leu Pro Leu Ser Ile Gly Gly Gly Ile
 325 330 335
 Gly Gln Ser Arg Leu Cys Met Phe Tyr Leu Arg Lys Ala His Ile Gly
 340 345 350
 Glu Ile Gln Ala Ser Ile Trp Pro Glu Glu Met Arg Arg Glu Cys Thr
 355 360 365
 Ala Leu Asn Ile His Leu Ile
 370 375

<210> 9092

<211> 211

<212> PRT

<213> B.fragilis

<400> 9092

Arg Thr Leu Ser Pro Phe Ala Asp Asp Thr Tyr Leu Cys Ile Ile Gln
 1 5 10 15
 Thr Asp Ala Lys Ser Leu Met Glu Thr Phe Ile Glu Lys Phe Arg Asn
 20 25 30
 Ser Tyr His Leu Ser Glu Asn Asp Thr Gln Thr Leu Leu Ser Tyr Met
 35 40 45
 Glu Glu Ile Arg Phe Lys Lys Lys Glu Val Ile Val His Glu Gly Ser
 50 55 60
 Lys Asn Gly Asn Leu Tyr Leu Ile Lys Gln Gly Ile Trp Arg Ala His
 65 70 75 80
 Tyr Leu Lys Asp Gly Val Asp Thr Thr Ile Trp Phe Ala Gly Ala Gly
 85 90 95
 Glu Ala Ala Phe Ser Val Trp Gly Tyr Val Glu Asn Thr Ala Ser His
 100 105 110
 Ile Thr Ile Glu Val Met Cys Asp Ser Ile Ala Tyr Cys Ile Pro Gly
 115 120 125
 Ser Thr Leu Asn Asn Leu Tyr Ala Ser Ser Leu Gly Leu Ala Asn Leu
 130 135 140
 Gly Arg Gln Leu Met Glu Arg Gln Leu Leu Ser Leu Glu Asn Trp Leu

145 150 155 160
 Ile Ser Ala Gly Ser Pro Lys Ala Lys Glu Arg Tyr Leu Thr Leu Ile
 165 170 175
 Lys Glu His Pro Glu Leu Leu Gln Asn Val Pro Leu Lys His Ile Ala
 180 185 190
 Ser Tyr Leu Trp Ile Thr Pro Gln Ser Leu Ser Arg Ile Arg Arg Glu
 195 200 205
 Met Lys Met
 210

<210> 9093
 <211> 519
 <212> PRT
 <213> B.fragilis

<400> 9093

Glu Tyr Phe Pro Ser Ser Val Ile Ile Leu Phe Ser Glu Ile Asn Lys
 1 5 10 15
 Arg Arg Thr Met Asn Lys Pro Tyr Phe Ile Ala Phe Leu Leu Ser Leu
 20 25 30
 Ala Leu Trp Thr Val Ile Pro Ser Val Phe Ala Gly Asp Val Val Leu
 35 40 45
 Lys Val Phe Glu Gly Lys Pro Arg Ile Asn Ser Pro His Ile Thr Gly
 50 55 60
 Asn Tyr Pro Ser Thr Pro Phe Ile Phe Tyr Ile Pro Thr Ser Gly Gln
 65 70 75 80
 Arg Pro Met Gln Trp Ser Ala Glu Lys Leu Pro Glu Gly Leu Glu Leu
 85 90 95
 Asp Ser Lys Thr Gly Ile Ile Ser Gly Val Val Thr Ser Lys Gly Asp
 100 105 110
 Tyr Thr Val Thr Leu Lys Ala Glu Asn Ala Leu Gly Val Ser Val Lys
 115 120 125
 Gln Leu Val Ile Arg Ile Gly Asp Glu Leu Leu Leu Thr Pro Pro Met
 130 135 140
 Gly Trp Asn Ser Trp Asn Thr Phe Gly Gln His Leu Thr Glu Glu Leu
 145 150 155 160
 Val Leu Gln Thr Ala Asp Ala Met Ile Thr Asn Gly Met Arg Asp Leu
 165 170 175
 Gly Tyr Ser Tyr Ile Asn Ile Asp Asp Phe Trp Gln Leu Pro Glu Arg
 180 185 190
 Gly Ala Asp Gly His Leu Gln Ile Asp Lys Thr Lys Phe Pro Arg Gly
 195 200 205
 Ile Lys Tyr Val Ala Asp Tyr Leu His Glu Arg Gly Phe Lys Leu Gly
 210 215 220
 Ile Tyr Ser Asp Ala Ala Glu Lys Thr Cys Gly Gly Val Cys Gly Ser
 225 230 235 240
 Tyr Gly Tyr Glu Glu Thr Asp Ala Lys Asp Phe Ala Ser Trp Gly Val
 245 250 255
 Asp Leu Leu Lys Tyr Asp Tyr Cys Asn Ala Pro Val Asp Arg Val Glu
 260 265 270
 Ala Met Glu Arg Tyr Ala Lys Met Gly Arg Ala Leu Arg Ala Thr Asn
 275 280 285
 Arg Ser Ile Val Tyr Ser Val Cys Glu Trp Gly Gln Arg Glu Pro Trp
 290 295 300
 Lys Trp Ala Lys Gln Val Gly Gly His Leu Trp Arg Val Ser Gly Asp
 305 310 315 320
 Ile Gly Asp Ile Trp Tyr Arg Asp Gly Asn Arg Val Gly Gly Leu His
 325 330 335
 Gly Ile Leu Asn Ile Leu Glu Ile Asn Ala Pro Leu Ser Glu Tyr Ala

340 345 350
 Ser Pro Ser Gly Trp Asn Asp Pro Asp Met Leu Val Val Gly Ile Asp
 355 360 365
 Gly Lys Ser Met Ser Ile Gly Tyr Glu Ser Glu Gly Cys Thr Gln Glu
 370 375 380
 Gln Tyr Lys Ser His Phe Ser Leu Trp Cys Met Met Ala Ser Pro Leu
 385 390 395 400
 Leu Ser Gly Asn Asp Val Arg Asn Met Asn Asp Ser Thr Leu Lys Ile
 405 410 415
 Leu Leu Asp Pro Asp Leu Ile Ala Ile Asn Gln Asp Val Leu Gly Arg
 420 425 430
 Gln Ala Glu Arg Ser Ile Arg Ser Asp His Tyr Asp Ile Trp Val Lys
 435 440 445
 Pro Leu Ala Asp Gly Cys Lys Ala Val Ala Cys Phe Asn Arg Ala Ser
 450 455 460
 Ser Pro Gln Thr Val Ile Leu Asn Glu Asn Thr Ile Ala Asp Leu Ser
 465 470 475 480
 Phe Glu Gln Ile Tyr Cys Leu Asp Ser His Leu Thr Lys Ser Gly Ser
 485 490 495
 Asp Ser Lys Glu Leu Ile Val Lys Leu Ala Pro Tyr Gln Cys Lys Val
 500 505 510
 Tyr Ile Phe Gly Lys Thr Asp
 515

<210> 9094
 <211> 167
 <212> PRT
 <213> B.fragilis

<400> 9094
 Asn Tyr Lys Pro Pro Thr His Met Lys Asp Leu Thr Ile Thr Ser Val
 1 5 10 15
 Ile Lys Val Tyr Glu Tyr Asp Glu Leu Asn Asp Thr Asp Arg Ala Leu
 20 25 30
 Leu Asp Asp Ala Ile Glu Ala Thr Arg Arg Ser Tyr Ala Pro Tyr Ser
 35 40 45
 His Phe Ser Val Gly Ala Ala Ala Leu Leu Ala Asn Gly Val Val Val
 50 55 60
 Thr Gly Thr Asn Gln Glu Asn Ala Ala Tyr Pro Ser Gly Leu Cys Ala
 65 70 75 80
 Glu Arg Thr Thr Leu Phe Tyr Ala Asn Ser Gln Tyr Pro Asp Gln Ala
 85 90 95
 Val Val Thr Leu Ala Ile Ala Ala Arg Thr Glu Lys Asp Phe Ile Asp
 100 105 110
 Thr Pro Ile Pro Pro Cys Gly Ala Cys Arg Gln Val Ile Leu Glu Thr
 115 120 125
 Glu Lys Arg Tyr Lys Gln Pro Ile Arg Ile Leu Leu Tyr Gly Lys Lys
 130 135 140
 Cys Ile Tyr Glu Val Gln Ser Ile Gly His Leu Leu Pro Leu Ser Phe
 145 150 155 160
 Asp Ala Ser Ala Met Glu Asp
 165

<210> 9095
 <211> 426
 <212> PRT
 <213> B.fragilis

<400> 9095

Lys Gln Arg Pro Met Met Ile Lys Gln Ile Phe Lys Met Ile Trp Asn
 1 5 10 15
 Gln Arg Arg Leu Asn Gly Trp Ile Trp Met Glu Leu Leu Val Val Phe
 20 25 30
 Val Ala Leu Trp Tyr Leu Val Asp Met Phe Val Val Gln Leu Tyr Ser
 35 40 45
 Tyr Thr Arg Pro Met Gly Tyr Asp Ile Thr Asn Cys Trp Lys Leu Ser
 50 55 60
 Phe Asp Val Tyr Pro Glu Asp Ala Asp Glu Tyr Val Asn Asp Thr Thr
 65 70 75 80
 Gln Thr Gln Thr Glu Gly Glu Ala Leu Ala Lys Ile Leu Glu Arg Leu
 85 90 95
 Arg Arg Ala Pro Glu Val Asp Asn Ala Cys Val Ala Phe Tyr Ser Ser
 100 105 110
 Pro Tyr Ser Gly Gly Asn Ser Trp Thr Gln Ile Met Pro Cys Thr Ala
 115 120 125
 Asp Ser Ser Lys Phe Lys Glu Gln Ser Tyr His Gln Tyr Ile Val Ser
 130 135 140
 Ala Glu Phe Tyr Asp Val Phe Arg Ile Lys Asn Arg Glu Gly Lys Pro
 145 150 155 160
 Leu Ser Glu Leu Leu Thr Gln Lys Gln Leu Ser Tyr Phe Ile Thr Pro
 165 170 175
 Ala Leu Glu Lys Asp Phe Phe Gly Ser Gln Ser Ala Val Gly Gln Lys
 180 185 190
 Val Arg Tyr Pro Gly Ser Thr Arg Glu Ile His Ile Ala Ala Val Thr
 195 200 205
 Ala Pro Val Arg Ile Thr Glu Phe Val Lys Pro Glu Pro Glu Leu Phe
 210 215 220
 Phe Thr Met Trp Pro Lys Glu Leu Glu Arg Gln Val Asn Ala Thr Gly
 225 230 235 240
 Ala Ser Asn Met Glu Val Thr Val Arg Met Lys Glu Glu Leu Thr Ser
 245 250 255
 Glu Gln Met Gly His Phe Leu Asn Arg Met Lys Asn Gln Leu Thr Glu
 260 265 270
 Asn Asn Leu Tyr Ile Thr Gly Met Glu Asp Met Lys Gln Gln Arg Ser
 275 280 285
 Asp Arg Leu Gln Tyr Glu Trp Arg Lys Ile Ser Ile Asn Leu Leu Leu
 290 295 300
 Ser Val Phe Ile Leu Leu Asn Val Leu Phe Gly Ile Thr Gly Thr Phe
 305 310 315 320
 Trp Leu Arg Ile Glu Gln Arg Arg Cys Glu Thr Gly Leu Arg Met Ala
 325 330 335
 Leu Gly Ser Thr Arg Arg Arg Val Gly Trp Phe Phe Thr Ala Glu Gly
 340 345 350
 Trp Leu Leu Leu Thr Thr Val Val Pro Leu Val Leu Val Val Ile Phe
 355 360 365
 Asn Met Val His Met Glu Ile Pro Asp Leu Tyr Asn Leu Ser Phe Thr
 370 375 380
 Trp Trp Arg Phe Ala Val Ser Phe Gly Gly Val Leu Leu Leu Met Gly
 385 390 395 400
 Leu Ile Ile Ala Leu Gly Ile Trp Leu Pro Ala Arg Arg Ala Met Lys
 405 410 415
 Leu Gln Pro Ala Glu Ala Leu His Tyr Glu
 420 425

<210> 9096

<211> 81

<212> PRT

<213> B.fragilis

<400> 9096

Arg His His Thr Gly Cys Arg Thr Gln Asp Leu Ser Tyr Val Phe Lys
 1 5 10 15
 Phe Arg Cys Cys Ser Lys Asn Asn Ile Ser Ser Arg Met Ile Asp Pro
 20 25 30
 Tyr Ser Leu Lys Lys Ala Lys Glu Asp Glu Glu Asp Lys Met Leu Lys
 35 40 45
 Glu Val Arg Leu Pro Ile Gly Gln Val Gln Thr Asp Ile Pro Leu Thr
 50 55 60
 Cys Leu Leu Phe Lys Glu Tyr Val Pro Arg Asn Asp Gln Leu Lys Asn
 65 70 75 80
 Arg

<210> 9097

<211> 329

<212> PRT

<213> B.fragilis

<400> 9097

Leu Val Thr Thr Arg Pro Thr Ser Leu Ser Trp Thr Ser Leu Pro Thr
 1 5 10 15
 Ile Trp Ile Tyr Lys Val Ser Lys Ser Ser Gln Leu Pro Phe Gly Thr
 20 25 30
 Ile Arg Ala Val Tyr Cys Leu Tyr His Met Met Asn Ile Leu Gln Arg
 35 40 45
 Lys Pro Ala Ser Glu Arg Val Ser Phe Tyr Asn Phe Ala Pro Phe Lys
 50 55 60
 Lys Asn Asn Pro Lys Met Ile Asn Thr Glu Thr Asn Tyr Arg Trp Phe
 65 70 75 80
 Ile Phe Tyr Gln Asp Gln Leu Leu Leu Glu Lys Asn Asp Asn Ala Phe
 85 90 95
 Ser Ile Pro Thr Gly Lys Asn Ala Pro Val Thr Ile Pro Glu Gly Ile
 100 105 110
 Thr Val His Thr Ile Thr Thr Ala Thr Gly Met Val Cys Lys Ala Phe
 115 120 125
 Tyr Thr Asp Ser Pro Ile Ala Glu Thr Pro Glu Tyr Val Gln Ile Gly
 130 135 140
 Leu Arg Ala Ser Tyr Asp Tyr Leu Ser Pro Glu His Tyr Gln Ala Ala
 145 150 155 160
 Gly Lys Val His Glu Ile Leu Tyr Trp Asp Arg Ser Asn Arg Phe Cys
 165 170 175
 Pro Thr Cys Gly Thr Pro Leu Val Gln Lys Glu Pro Ile Met Lys Lys
 180 185 190
 Cys Pro Asn Cys Gly Arg Glu Ile Tyr Pro Val Ile Ser Thr Ala Ile
 195 200 205
 Leu Val Leu Val Arg Lys Glu Asp Ser Leu Leu Leu Val His Ala Arg
 210 215 220
 Asn Phe Lys Gly Thr Phe Asn Ser Leu Val Ala Gly Phe Leu Glu Thr
 225 230 235 240
 Gly Glu Thr Leu Glu Glu Cys Val Ala Arg Glu Val Lys Glu Glu Thr
 245 250 255
 Gly Leu Asp Val Lys Asn Ile Arg Tyr Phe Gly Ser Gln Pro Trp Pro
 260 265 270
 Tyr Pro Ser Gly Leu Met Val Gly Phe Ile Ala Asp Tyr Ala Gly Gly
 275 280 285
 Asp Ile His Leu Gln Asp Asp Glu Leu Ser Ser Gly Asn Phe Tyr Thr
 290 295 300

Arg Asp His Leu Pro Glu Leu Pro Arg Lys Leu Ser Leu Ala Arg Lys
 305 310 315 320
 Met Ile Asp Trp Trp Ile Ala Gln Gln
 325

<210> 9098

<211> 213

<212> PRT

<213> B.fragilis

<400> 9098

Ser Leu His Gln Lys Val Lys Pro Ile Lys Arg Asn Ser Met Lys Glu
 1 5 10 15
 Lys Phe Ile Thr Leu Leu Thr Val Ala Ser Gly Leu Lys Gly Phe Gly
 20 25 30
 Leu Lys Phe Ile Arg Val Ala Ile Leu Val Val Phe Val Trp Ile Gly
 35 40 45
 Gly Leu Lys Tyr Phe His Tyr Glu Ala Asp Gly Ile Val Pro Phe Val
 50 55 60
 Ala Asn Ser Pro Phe Met Ser Phe Phe Tyr Ala Lys Asp Ala Pro Glu
 65 70 75 80
 Tyr Lys Glu His Lys Asn Pro Glu Gly Ala Tyr Val Pro Ala Asn Arg
 85 90 95
 Glu Trp His Glu Ala Asn Arg Thr Tyr Thr Phe Ser Tyr Gly Leu Gly
 100 105 110
 Ala Leu Ile Met Ser Ile Gly Ile Leu Val Phe Leu Gly Ile Phe Phe
 115 120 125
 Pro Lys Val Ala Leu Val Gly Asp Thr Leu Ala Ile Ile Met Thr Leu
 130 135 140
 Gly Thr Leu Ser Phe Leu Val Thr Thr Pro Glu Val Trp Val Pro Asn
 145 150 155 160
 Leu Gly Ser Gly Glu Tyr Gly Phe Pro Leu Leu Ser Gly Ala Gly Arg
 165 170 175
 Leu Val Ile Lys Asp Ile Val Ile Leu Ala Ser Ala Val Thr Leu Leu
 180 185 190
 Ser Asp Ser Ser Gln Arg Val Leu Asn Ser Leu Lys Lys Ala Asp Trp
 195 200 205
 Glu Lys Arg Asn Lys
 210

<210> 9099

<211> 287

<212> PRT

<213> B.fragilis

<400> 9099

Arg Ile Ser His Gly Gly Leu Ile Met Ile Arg Thr Tyr Gln Thr Lys
 1 5 10 15
 Leu Lys Gly Met Leu Ala Leu Thr Thr Ser Tyr His Thr Glu Lys Ser
 20 25 30
 Leu Gln Lys Glu Lys Ser Leu Tyr Lys Phe Ile Trp Val Arg Lys Gly
 35 40 45
 Ser Ile Thr Leu Glu Ile Asp His Gln Glu Val Ile Leu Ala Glu Asn
 50 55 60
 Glu Val Ile Ser Leu Ser Asn Leu Gln His Leu Glu Phe Leu Ser Ile
 65 70 75 80
 Asp Gly Glu Tyr Leu Thr Val Leu Phe Asn Ser Asn Phe Tyr Cys Ile
 85 90 95
 Tyr Gly Asn Asp His Glu Val Ser Cys Ser Gly Phe Leu Phe Asn Gly

	100		105		110
Ser	Ser	His	Val	Val	Arg
	115				
Met	Glu	Asp	Val	Val	Gly
	130				
Asn	Leu	Gln	Glu	Glu	Met
	145				
Gln	Ser	Thr	Arg	Ile	Ala
Glu	Tyr	Ser	Phe	Glu	Ile
His	Phe	Arg	Thr	Lys	Lys
	195				
Lys	Ser	Pro	Lys	Thr	Leu
	210				
Ser	Pro	Leu	Arg	Val	Ile
	225				
Leu	Leu	Leu	Tyr	Ser	Asn
Gly	Phe	Glu	Asp	Gln	Ser
Gly	Glu	Ser	Pro	Val	Gln
	275				

<210> 9100

<211> 478

<212> PRT

<213> B.fragilis

<400> 9100

Gly	Gly	Ile	His	Met	Asn	Lys	Ile	Lys	Asn	Leu	Phe	Val	Ile	Ile	Leu
1				5					10					15	
Phe	Ala	Leu	Val	Ala	Phe	Ser	Cys	Ser	Asp	Ile	Leu	Asp	Lys	Gly	Pro
			20					25					30		
Leu	Asp	Lys	Tyr	Ser	Glu	Asn	Asp	Val	Trp	Lys	Ser	Thr	Asp	Leu	Thr
			35				40					45			
Gln	Ala	Phe	Ile	Tyr	Thr	Ala	Leu	Ala	Asn	Ala	Thr	Asn	Met	Met	Val
	50					55				60					
Trp	Lys	Asp	Asn	Trp	Thr	Asp	Asn	Glu	Ala	Ile	Met	Glu	Asp	Gly	Arg
65					70				75						80
Asp	Val	Asn	Ala	Glu	Leu	Ile	Asp	Arg	Tyr	Tyr	Asp	Ala	Gly	Trp	Asn
			85					90					95		
Lys	Tyr	Glu	Asp	Ile	Arg	Arg	Cys	Asn	Met	Val	Leu	Ala	Arg	Val	Pro
			100					105					110		
Glu	Ala	Pro	Phe	Thr	Asn	Ala	Glu	Lys	Ala	Asn	Phe	Ile	Ala	Gln	Ala
	115						120					125			
Lys	Thr	Ile	Arg	Ala	Met	Ile	Tyr	Phe	Thr	Arg	Ala	Arg	Leu	Phe	Gly
	130					135					140				
Lys	Leu	Met	Leu	Val	Lys	Glu	Leu	Ile	Asp	Pro	Glu	Ala	Asp	Met	Lys
145					150				155						160
Phe	Pro	Arg	Thr	Ala	Thr	Val	Lys	Glu	Thr	Tyr	Asp	Phe	Ile	Leu	Asn
			165					170						175	
Asp	Leu	Arg	Glu	Ala	Ala	Pro	Asp	Leu	Pro	Val	Asp	Ala	Pro	Ser	Gly
	180						185					190			
Ala	Leu	Ser	Arg	Gly	Val	Ala	Tyr	Ala	Leu	Leu	Gly	Glu	Ala	Ala	Leu
	195					200						205			
His	Gly	Ala	Ala	Tyr	Ile	Glu	Asn	Gly	Gln	Glu	Glu	Tyr	Tyr	Arg	Ile
	210					215				220					
Ala	Ala	Lys	Ala	Cys	Glu	Asp	Leu	Phe	Ala	Leu	Asp	Lys	Tyr	Ser	Leu

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<210> 9101
<211> 467
<212> PRT
<213> B.fragilis
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<400> 9101															
Arg	Tyr	Ile	Leu	Lys	Val	Ile	Arg	Ile	Met	Lys	Gln	Tyr	Asp	Ala	Ile
1				5					10					15	
Ile	Ile	Gly	Phe	Gly	Lys	Gly	Gly	Lys	Thr	Leu	Thr	Ala	Glu	Leu	Ala
			20					25					30		
Lys	Arg	Gly	Trp	Lys	Val	Ala	Leu	Ile	Glu	Arg	Ser	Ala	Met	Met	Tyr
			35				40					45			
Gly	Gly	Thr	Cys	Pro	Asn	Ile	Ala	Cys	Val	Pro	Thr	Lys	Arg	Leu	Ile
			50			55					60				
His	Glu	Ala	Glu	Lys	Val	Ser	Trp	Leu	Tyr	Pro	Thr	Asp	Tyr	Glu	Lys
65					70					75				80	
Gln	Ala	Glu	Ala	Tyr	Lys	Ala	Ala	Ile	Ala	Arg	Lys	Asn	Glu	Met	Thr
				85					90					95	
Ala	Ala	Ser	Arg	Ala	Asn	Met	Phe	Asn	Lys	Leu	Ser	Ser	Leu	Pro	Asn
			100					105					110		
Val	Thr	Ile	Tyr	Thr	Gly	Met	Ala	Ser	Phe	Val	Ser	Lys	Asp	Val	Val
			115				120					125			
Lys	Val	Thr	Leu	Pro	Asp	Glu	Val	Ile	Glu	Leu	Gln	Gly	Lys	Lys	Ile
			130			135					140				
Phe	Ile	Asn	Thr	Gly	Ser	Thr	Ser	Ile	Ile	Pro	Ala	Ile	Asp	Gly	Leu
145					150					155				160	
Lys	Asp	Ser	Lys	Arg	Val	Tyr	Thr	Ser	Thr	Ser	Leu	Met	Glu	Leu	Asp

165 170 175
 Val Leu Pro Arg His Leu Ile Ile Val Gly Gly Gly Tyr Ile Gly Leu
 180 185 190
 Glu Phe Ala Ser Met Tyr Ala Ser Phe Gly Ser Lys Val Thr Val Leu
 195 200 205
 Glu Gly Gly Asn Lys Phe Ile Ala Arg Glu Asp Arg Asp Ile Ala Asp
 210 215 220
 Ala Val Lys Glu Thr Leu Glu Lys Lys Gly Ile Glu Ile Arg Leu Asn
 225 230 235 240
 Ala Arg Ala Gln Ser Ile Gln Asp Thr Ala Asp Gly Val Thr Leu Thr
 245 250 255
 Tyr Thr Asp Thr Ala Asp Gly Lys Pro Val Thr Ile Glu Gly Asp Ala
 260 265 270
 Ile Leu Val Ala Thr Gly Arg Lys Pro Met Thr Glu Gly Leu Asn Leu
 275 280 285
 Gln Ala Ala Gly Val Glu Val Asp Ser His Gly Ala Ile Val Val Asn
 290 295 300
 Gly Tyr Leu His Thr Thr Ala Pro Asn Ile Trp Ala Met Gly Asp Val
 305 310 315 320
 Lys Gly Gly Leu Gln Phe Thr Tyr Ile Ser Leu Asp Asp Tyr Arg Ile
 325 330 335
 Ile Arg Asp Asp Leu Phe Gly Asn Lys Glu Arg Thr Ala Asp Asp Arg
 340 345 350
 Asn Pro Val Ala Tyr Ser Val Phe Ile Asp Pro Pro Leu Ser His Val
 355 360 365
 Gly Leu Thr Glu Glu Glu Ala Ile Lys Arg Gly Tyr Ser Phe Lys Val
 370 375 380
 Ser Arg Leu Pro Ala Ser Ala Leu Pro Arg Ala Arg Thr Leu Gln Gln
 385 390 395 400
 Thr Asp Gly Ile Leu Lys Ala Ile Val Asp Ser His Ser Gly Arg Ile
 405 410 415
 Met Gly Cys Thr Leu Phe Cys Ala Glu Ser Ser Glu Val Ile Asn Val
 420 425 430
 Val Asn Met Ala Met Lys Thr Gly Gln His Tyr Thr Phe Leu Arg Asp
 435 440 445
 Phe Ile Phe Thr His Pro Ser Met Gly Glu Gly Leu Asn Asp Leu Phe
 450 455 460
 Ser Ile Asp
 465

<210> 9102

<211> 299

<212> PRT

<213> B.fragilis

<400> 9102

Met Asn Ser Lys Leu Leu Arg Leu Ile Ala Ile Val Thr Val Leu Ala
 1 5 10 15
 Phe Ala Ala Gly Ala Gln Ala Gln Arg Asn Ser Arg Tyr Val Asp
 20 25 30
 Tyr Ile Asn Lys Tyr Ser Ala Leu Ala Val Gln Gln Met Lys Glu His
 35 40 45
 Lys Ile Pro Ala Ser Ile Thr Leu Ala Gln Gly Leu Leu Glu Ser Gly
 50 55 60
 Ala Gly Met Ser Thr Leu Ala Arg Lys Ser Asn Asn His Phe Gly Ile
 65 70 75 80
 Lys Cys Gly Ser Asn Trp Asn Gly Arg Thr Val Arg His Asp Asp Asp
 85 90 95
 Ala Arg Asn Glu Cys Phe Arg Ala Tyr Arg Asn Pro Arg Asp Ser Tyr

	100		105		110
Glu Asp His Ser Ala Phe Leu Lys Arg Gly Ala Arg Tyr Ala Phe Leu					
115		120		125	
Phe Lys Leu Lys Ile Thr Asp Tyr Lys Gly Trp Ala Arg Gly Leu Lys					
130		135		140	
Lys Ala Gly Tyr Ala Thr Asp Pro Ser Tyr Ala Asn Arg Leu Ile Thr					
145		150		155	160
Ile Ile Glu Asp Tyr Asp Leu Tyr Lys Tyr Asp Arg Lys Gly Gly Trp					
165		170		175	
Ser Ser Ser Lys Ser Glu Pro Thr Val Leu Asn Pro His Gln Val Tyr					
180		185		190	
Ile Ala Asn Gly Ile Ala Tyr Ile Val Ala Arg Asp Gly Asp Thr Phe					
195		200		205	
Lys Ser Leu Ala Lys Glu Phe Asp Ile Arg Trp Lys Lys Leu Val Lys					
210		215		220	
Tyr Asn Asp Leu Gln Arg Asp Tyr Thr Leu Met Ser Gly Asp Ile Ile					
225		230		235	240
Tyr Leu Lys Glu Lys Lys Lys Arg Ala Ser Lys Pro Tyr Thr Val Tyr					
245		250		255	
Ile Val Lys Asp Gly Asp Ser Met His Thr Ile Ser Gln Lys Phe Ala					
260		265		270	
Ile Arg Leu Lys Asn Leu Tyr Lys Met Asn Arg Lys Asp Gly Asp Tyr					
275		280		285	
Ile Pro Glu Val Gly Asp Arg Leu Arg Leu Arg					
290		295			

<210> 9103

<211> 300

<212> PRT

<213> B.fragilis

<400> 9103

Lys Arg Met Lys Asp Leu Val Ser Gly Ile Arg Tyr Asp Ala Ser Asn					
1	5		10		15
Val Ile Ser Gln Ala Ile Gly Pro Ser Lys Glu Phe Cys Met Gly Tyr					
20		25		30	
Leu Asn Pro Gly Val Val Gly Gly Glu Gly Tyr Ile Ser Thr Met Lys					
35		40		45	
Leu Ser Val Gly Thr Val Asp Val Lys Asp Leu Asp Ala Ile Thr Glu					
50		55		60	
Arg Ile Val Ala Lys Asp Arg Cys Glu Lys Asn Asp Ala Tyr Leu Gly					
65		70		75	80
Gln Val Asn Leu Met Lys Ala Ser Ser Phe Cys Gly Gln Asn Gly Ala					
85		90		95	
Ile Trp Gly Phe Asp Leu Ala Met His Asp Asp Ile Ala Lys Arg Lys					
100		105		110	
Glu Met Pro Ile Tyr Met Gln Ala Gln Pro Glu Gly Ala Asp Ile Pro					
115		120		125	
Val Tyr Asn Ile Arg Pro Leu Leu Glu Ala Thr Glu Arg Leu Phe Gly					
130		135		140	
Arg Ala Lys Glu Arg Arg Phe Pro Val Leu Pro Gly Ala Tyr Val Pro					
145		150		155	160
Gly Gly Ser Arg Lys Val Val Ala Cys Gly Pro Val Trp Val Trp Ser					
165		170		175	
Val Ile Gly Leu Ala Ile Leu Lys Asp Arg Ser Lys Gly Ala Cys Leu					
180		185		190	
Phe Val Lys Asp Ala Gly Thr Tyr Gly Asp Asp Ser Thr Thr Glu Gly					
195		200		205	
Glu Ala Ile Gly Phe Leu Glu Gly Ile Leu Arg Lys Ala Thr Asn Ser					

210	215	220
Ile Ala Leu Cys Gly Glu Asp Gln Asp Val Ile Tyr Asp Arg Ile Tyr		
225	230	235
Ile Gly Tyr Lys Tyr Thr Phe Val Glu Pro Gly Gln Val Gly Cys Ala		240
	245	250
Leu Ser Cys Thr Pro Ala Val Tyr Met Ala Gln Asn Ala Ile Pro Ala		255
	260	265
Asp Met Lys Pro Ala Asp Leu Cys Gln Met Thr Ile Ser Asp Trp Glu		270
	275	280
Glu Lys Leu Gly Leu Glu Glu Leu Thr Ile Phe Glu		285
290	295	300

<210> 9104
 <211> 156
 <212> PRT
 <213> B.fragilis

<400> 9104
Ser Ile Thr Asn Met Lys Lys Leu Ile Asn Thr Val Leu Leu Leu Phe
1 5 10 15
Leu Ile Gly Ile Val Ser Ser Cys Leu Lys Ser Gly Leu Asp Asp Leu
20 25 30
Glu Ala Tyr Asn Glu Ala Glu Ile Thr Asn Leu Asn Phe Glu Tyr Arg
35 40 45
Trp Trp Asp Glu Ala Lys Asp Gln Met Ala Val Lys Thr Leu Asn Ile
50 55 60
Glu Lys Gln Ile Ser Gln Asp Asp Asn Leu Ile Thr Cys Lys Leu Thr
65 70 75 80
Val Pro Ala Ala Gly Gly Ser Phe Thr Asp Ala Val Arg Gln Asn Val
85 90 95
Ser Leu Ser Asn Leu Ile Ala Tyr Met Asp Leu Ser Thr Ala Ala Arg
100 105 110
Ile Thr Pro Leu Asn Gly Ala Pro Lys Leu Gly Asn Pro Gly Asp Phe
115 120 125
Ser Ala Lys Glu Phe Lys Tyr Gln Val Thr Ala Ala Asp Gly Thr Lys
130 135 140
Arg Glu Trp Thr Ile Lys Ile Thr Asp Phe Val Lys
145 150 155

<210> 9105
 <211> 430
 <212> PRT
 <213> B.fragilis

<400> 9105
Ala Val Cys Leu Leu Ile Cys Lys Ile Met Ile Thr Ile Tyr Leu Lys
1 5 10 15
Gln Ser Tyr Asn Leu Leu Lys Glu Asn Arg Phe Val Asn Gly Ile Ser
20 25 30
Ile Ala Gly Thr Ala Leu Ser Val Ala Ala Val Met Leu Ile Tyr Leu
35 40 45
Val Tyr Gln Val Asn Phe Ser Ala Tyr Ala Pro Glu Ser Asn Arg Tyr
50 55 60
Arg Ile Leu Phe Val Ser Ser Leu Gln Ala Cys Gly Ser Asp Gly His
65 70 75 80
Pro Ile Asn Asn Gly Gly Met Ser His Lys Val Val Arg Glu Cys Leu
85 90 95
Tyr Pro Leu Gln Thr Pro Glu Ala Val Thr Ala Phe Thr Ser Gly Asp
100 105 110

Leu Pro Val Asn Val His Gly Gln Gln Phe Tyr Asp Lys Tyr Ala Ile
 115 120 125
 Lys Phe Thr Asp Asp Gly Phe Trp Lys Val Phe Asp Phe Thr Phe Leu
 130 135 140
 Ala Gly Gly Pro Phe Thr His Thr Asp Trp Glu Ser Gly Ile Arg Lys
 145 150 155 160
 Ala Val Ile Ser Asp Lys Leu Ala Arg Arg Leu Phe Gly Thr Val Glu
 165 170 175
 Ala Val Gly Gln Thr Leu Arg Met Asn Tyr Ala Asp Tyr Arg Ile Cys
 180 185 190
 Gly Val Val Lys Glu Val Ser Arg Ala Ala Glu Ser Ser Tyr Gly Asp
 195 200 205
 Val Trp Ile Pro Tyr Thr Ala Asn Ala Ser Leu Leu Lys Asp Asn Ile
 210 215 220
 Ser Tyr Cys Glu Gly Thr Thr Gly Glu Phe Gln Ala Cys Ile Leu Ser
 225 230 235 240
 Arg Ser Arg Ser Asp Phe Glu Ala Ile Arg Arg Glu Met Leu Lys Leu
 245 250 255
 Gln Ser Thr Phe Asn Ala Ser Leu Thr Gly Thr Lys Leu Asp Tyr Met
 260 265 270
 His Ser Pro Phe Thr Gln Trp Gln Ala Val Leu Gly Thr Asn Gly Phe
 275 280 285
 Ser Glu Gly Thr Val Gly Glu Trp Leu Lys Ser Thr Gly Ala Val Ile
 290 295 300
 Leu Phe Leu Leu Leu Leu Pro Ala Leu Asn Ile Ile Gly Ile Thr Leu
 305 310 315 320
 Thr Gln Phe Arg Lys Arg Arg Ser Glu Ile Gly Val Arg Lys Ala Phe
 325 330 335
 Gly Ala Cys Ser Phe Ser Leu Val Glu Gln Val Val Ile Glu Asn Leu
 340 345 350
 Leu Thr Ser Cys Met Gly Gly Leu Ile Gly Leu Leu Leu Ser Phe Gly
 355 360 365
 Leu Leu Ser Leu Cys Lys Ser Leu Phe Phe Ser Gly Asp Val Ser Leu
 370 375 380
 Thr His Asp Met Leu Ile Gln Pro Leu Thr Phe Val Ala Ala Phe Phe
 385 390 395 400
 Phe Thr Leu Ile Leu Asn Leu Leu Ser Ala Ala Ile Pro Ala Trp Arg
 405 410 415
 Ala Ser Arg Met Pro Ile Thr Glu Ala Leu His Asp Met Glu
 420 425 430

<210> 9106
 <211> 417
 <212> PRT
 <213> B.fragilis

<400> 9106
 Leu Tyr Met Asp Arg Glu Ile Pro Lys Glu Val Arg Asn Lys Glu Arg
 1 5 10 15
 Asn Lys Lys Ile Ile Arg Phe Ser Ala Ile Gly Ile Val Gly Ile Ile
 20 25 30
 Gly Ile Ser Val Leu Ile Ser Leu Leu Arg Thr Gly Val Gln Lys Lys
 35 40 45
 Asp Leu Val Phe Ser Thr Val Asp Lys Gly Thr Ile Glu Val Ser Val
 50 55 60
 Ser Ala Ser Gly Lys Val Val Pro Ala Phe Glu Glu Ile Ile Asn Ser
 65 70 75 80
 Pro Ile Asn Thr Arg Ile Val Glu Val Tyr Arg Lys Gly Gly Asp Ser
 85 90 95

Val Asp Val Gly Thr Pro Ile Leu Lys Leu Asp Leu Gln Ser Thr Glu
 100 105 110
 Thr Asp Tyr Lys Lys Leu Leu Asp Glu Glu Glu Met Lys Arg Tyr Lys
 115 120 125
 Leu Asp Gln Ala Lys Val Asn Ser Gln Thr Lys Leu Ser Asp Met Ala
 130 135 140
 Met Gln Ile Lys Val Ser Glu Met Lys Leu Ala Arg Met Lys Val Glu
 145 150 155 160
 Leu Arg Asn Glu Gln Tyr Leu Asp Ser Leu Gly Ala Gly Thr Thr Asp
 165 170 175
 Lys Val Arg Gln Ala Glu Leu Ser Tyr Asn Thr Ser Arg Leu Glu Leu
 180 185 190
 Glu Gln Leu Lys Gln Gln Tyr Thr Asn Glu Lys Gln Ile Ala Ala Ala
 195 200 205
 Asp Leu Lys Val Leu Glu Leu Asp Leu Asn Met Phe Arg Lys Gly Leu
 210 215 220
 Ala Glu Met Lys Arg Thr Leu Asp Asp Ala Gln Ile Arg Ser Pro Arg
 225 230 235 240
 Lys Ala Ile Leu Thr Tyr Ile Asn Asn Gln Ile Gly Ala Gln Ile Pro
 245 250 255
 Gln Gly Gly Gln Val Ala Ile Ile Ser Asp Leu Ser His Phe Lys Val
 260 265 270
 Asp Gly Glu Ile Ala Asp Thr Tyr Gly Asp Arg Val Ala Ala Gly Gly
 275 280 285
 Lys Ala Ile Val Lys Ile Gly Ser Glu Lys Leu Glu Gly Ile Val Ser
 290 295 300
 Ser Val Thr Pro Leu Ser Lys Asn Gly Val Ile Ser Phe Ser Val Gln
 305 310 315 320
 Leu Lys Glu Asp Asn Asn Lys Arg Leu Arg Ser Gly Leu Lys Thr Asp
 325 330 335
 Val Tyr Val Met Asn Ala Val Lys Glu Asp Val Leu Arg Ile Ala Asn
 340 345 350
 Ala Ser Tyr Tyr Val Gly Arg Gly Glu Tyr Asp Leu Phe Val Met Thr
 355 360 365
 Ser Asp Asp Glu Ile Val Lys Arg Lys Ile Gln Leu Gly Asp Ser Asn
 370 375 380
 Phe Glu Phe Val Glu Val Val Ser Gly Leu Asn Pro Gly Asp Lys Val
 385 390 395 400
 Val Val Ser Asp Met Thr Asn Tyr Lys Asn Lys Asn Lys Leu Lys Val
 405 410 415
 Lys

<210> 9107

<211> 531

<212> PRT

<213> B.fragilis

<400> 9107

Thr Ala Met Cys Ile Gln Val Gln Gln Ile Thr Tyr Ile His Pro Asp
 1 5 10 15
 Lys Glu Val Leu Phe Arg Asn Leu Ser Phe Thr Val Gly Arg Gly Arg
 20 25 30
 Gln Leu Ala Leu Ile Gly Asn Asn Gly Cys Gly Lys Ser Thr Leu Leu
 35 40 45
 Gln Ile Met Ala Gly Lys Leu Gln Pro Ser Ser Gly Asn Val Leu Arg
 50 55 60
 Pro Asp Asp Leu Tyr Tyr Val Pro Gln His Phe Gly Gln Tyr Asp Glu
 65 70 75 80

Met Ser Ile Ala Gln Ala Leu Gly Ile Asp Arg Lys Gln Lys Ala Leu
 85 90 95
 His Glu Ile Leu Asn Gly Asn Ala Ser Ile Asp His Phe Asn Ile Leu
 100 105 110
 Asp Asp Asp Trp Asn Ile Glu Glu Lys Ala Leu Ala Ala Leu Asn Gly
 115 120 125
 Trp Gly Leu Gly Asn Arg Ser Leu Ser Glu Ser Met His Thr Leu Ser
 130 135 140
 Gly Gly Glu Lys Thr Arg Val Phe Leu Ala Gly Leu Glu Leu Gln Glu
 145 150 155 160
 Pro Ser Ala Val Leu Met Asp Glu Pro Thr Asn His Leu Asp Asn Gln
 165 170 175
 Gly Arg Asn Arg Leu Tyr Glu Trp Val Lys Lys Cys Arg Ser Thr Leu
 180 185 190
 Ile Val Val Ser His Asp Arg Thr Leu Leu Asn Arg Phe Pro Glu Thr
 195 200 205
 Cys Glu Leu Ser Arg Asn Ala Leu Val Cys Tyr Gly Gly Asn Tyr Glu
 210 215 220
 Phe Tyr Lys Gln Gln Lys Glu Leu Gln Gln Asn Ala Leu Gln Gln Gln
 225 230 235 240
 Leu Asn Glu Lys Glu Lys Glu Leu Arg Gln Ile Arg Lys Leu Ala Arg
 245 250 255
 Glu Val Ala Glu Arg Lys Glu Lys Gln Asn Ile Arg Ser Glu Lys Ser
 260 265 270
 Val Pro Lys Lys Gly Ile Ser Arg Met Ala Val His Thr Leu Lys Asp
 275 280 285
 Arg Ala Glu Lys Ser Thr Thr Lys Leu Ala Asp Ile His Gln Asn Lys
 290 295 300
 Ser Glu Lys Leu Thr Ser Glu Arg Ser Leu Ile Arg Asn Arg Leu Ala
 305 310 315 320
 Glu Asn Thr Leu Leu Lys Thr Asp Phe His Ala Ser Ala Leu His Thr
 325 330 335
 Gly Lys Thr Leu Leu Ala Ala His Lys Ile Asn Phe Ser Tyr Gly Asn
 340 345 350
 Ser Pro Leu Trp Glu Val Pro Leu Cys Phe Gln Leu Lys Ser Gly Asp
 355 360 365
 Arg Ile Arg Ile Glu Gly Asp Asn Gly Ser Gly Lys Thr Thr Leu Leu
 370 375 380
 Lys Leu Val Thr Gly Asp Leu Leu Pro Thr Ser Gly Thr Leu Glu Arg
 385 390 395 400
 Ala Gly Phe Ser Tyr Val Tyr Leu Asn Gln Glu Tyr Ser Ile Ile Cys
 405 410 415
 Asn Gln Leu Thr Val Leu Gln Gln Ala Glu Ser Phe Asn Val Arg Ala
 420 425 430
 Leu Pro Glu His Glu Ile Lys Ile Arg Leu Asn Arg Phe Leu Phe Pro
 435 440 445
 Ala Thr Ser Trp Asp Gln Pro Cys Ile Gln Leu Ser Gly Gly Glu Lys
 450 455 460
 Met Arg Leu Ala Phe Cys Cys Leu Met Ile Ser Asn Asn Thr Pro Asp
 465 470 475 480
 Leu Phe Ile Leu Asp Glu Pro Thr Asn Asn Leu Asp Ile Gln Ser Ile
 485 490 495
 Glu Ile Ile Thr Ala Thr Val Arg Asn Tyr Thr Gly Ser Val Leu Leu
 500 505 510
 Val Ser His Asp Glu Tyr Phe Ala Lys Glu Thr Gly Ile Arg Lys Ser
 515 520 525
 Ile Phe Leu
 530

<210> 9108
 <211> 112
 <212> PRT
 <213> B.fragilis

<400> 9108
 Leu Met Ala Gly Leu Pro Glu Leu Gln Lys Ser Leu Ser Leu Glu Asp
 1 5 10 15
 Thr Trp Lys Glu Tyr Lys Arg Glu Arg Arg Ile Glu Leu Val Ser Glu
 20 25 30
 Gly Asp Arg Tyr Trp Ser Val Leu Arg Trp Gly Lys Ala Asp Gly Leu
 35 40 45
 Glu Val Val Pro Glu Leu Ile Val Glu Gln Lys Phe Met Lys Ile Ala
 50 55 60
 Pro Asp Gly Lys Ser Phe Glu Ile Leu Pro Leu Pro Ile Tyr Gln Ser
 65 70 75 80
 Asp Asn Glu Arg Thr Phe Thr Lys Lys His Tyr Leu Phe Pro Val Pro
 85 90 95
 Gln Gly Gln Arg Asp Leu Asn Pro Asn Leu Asp Gln Asn Glu Gly Trp
 100 105 110

<210> 9109
 <211> 63
 <212> PRT
 <213> B.fragilis

<400> 9109
 Gly Leu Phe Ile Val Leu Leu Leu Leu Ile Ser Leu Asn Asn Ile Ile
 1 5 10 15
 Thr Asp Glu Gly Lys Tyr Ser Gln Ile Ser Ser Phe Ile Ile Ser Ile
 20 25 30
 Ser Asn Pro Asn Asn Leu Asn Arg Tyr Ser Tyr Phe Thr Lys Ser Val
 35 40 45
 Ile Phe Ile Val His Ser Leu Phe Val Pro Ser Ala Ala Val Thr
 50 55 60

<210> 9110
 <211> 194
 <212> PRT
 <213> B.fragilis

<400> 9110
 Ile Asp Gly Phe Phe Ser Pro Leu Val Lys Thr Tyr Thr Asp Val Asn
 1 5 10 15
 Gly Asp Gly Lys Ile Asp Gly Glu Asp Gln Val Arg Ile Gly Lys Pro
 20 25 30
 Thr Met Pro His Phe Thr Tyr Ala Phe Asp Phe Ser Leu Gly Tyr Glu
 35 40 45
 Gly Phe Thr Leu Ser Gly Leu Leu Tyr Gly Thr Gly Glu Arg Tyr Met
 50 55 60
 Thr Phe Gly Asn Arg Tyr Gln Ser Gly Glu Gly Lys Tyr Leu Tyr Tyr
 65 70 75 80
 Glu Asn Gln Leu Asn Tyr Trp Arg Pro Asp Asn Thr Gly Ala Asp Phe
 85 90 95
 Pro Arg Ile Ser Ile Ser Ser Gly Val Asn Gly Asn Asn Asn Lys Ala
 100 105 110
 Gly Ser Thr Phe Trp Met Arg Asn Ala Ser Tyr Leu Arg Leu Lys Asp
 115 120 125
 Leu Gln Leu Ser Tyr Asp Phe Lys Tyr Lys Tyr Leu Lys Lys Cys Asp

130 135 140
 Trp Leu Gln Thr Cys Arg Val Asn Leu Ser Gly Ser Asn Leu Phe Thr
 145 150 155 160
 Ile Ser Gly Val Ser Lys Phe Phe Asp Pro Glu Thr Ser Ser Thr Ser
 165 170 175
 Gly Asp Gly Tyr Pro Val Gln Arg Val Tyr Ser Ile Gly Val Thr Ile
 180 185 190
 Gly Phe

<210> 9111
 <211> 160
 <212> PRT
 <213> B.fragilis

<400> 9111
 Leu Leu Lys Leu His Ile Met Ile Lys Leu Tyr Leu Lys Gln Ser Trp
 1 5 10 15
 Met Leu Ile Arg Gln Asn Lys Leu Phe Ser Ser Leu Tyr Val Leu Gly
 20 25 30
 Thr Gly Leu Ala Ile Ala Met Thr Met Ile Ile Ala Ile Val Tyr Tyr
 35 40 45
 Ile Lys Ile Ala Pro Ile Tyr Pro Glu Val Asn Arg Ser Leu Thr Met
 50 55 60
 Arg Met Lys Gly Val Ser Ala Met His Val Lys Gly Gly Gly Asn Ser
 65 70 75 80
 Tyr Ser Cys Ser Tyr Glu Met Leu Lys Asp Trp Phe Tyr Pro Leu Gln
 85 90 95
 Ser Ala Glu Leu Val Thr Ala Val Asn Glu His Phe Leu Thr Arg Lys
 100 105 110
 Gly Ser Tyr Ile Gln Pro Ala Gly Gly Gly Glu Gln Ile Pro Ala Leu
 115 120 125
 Val Lys Tyr Thr Asp Pro Asn Phe Phe Arg Leu Phe Glu Cys Glu Leu
 130 135 140
 Leu Asp Gly Ser Ser Pro Arg Gly Trp Lys Asp Pro Arg Gly Cys Tyr
 145 150 155 160

<210> 9112
 <211> 155
 <212> PRT
 <213> B.fragilis

<400> 9112
 Lys Val Leu Leu Lys Lys Lys Cys Thr Ala Ser Ser Asn Pro Ala Val
 1 5 10 15
 Lys Thr Ile Trp Met Leu Pro Ile Asp Ala Pro Trp Pro Met Gly Gly
 20 25 30
 Glu Ile Asp Ile Met Glu Arg Leu Asn His Asp Thr Ile Ala Tyr Gln
 35 40 45
 Thr Ile His Thr Asn Tyr Thr Tyr Asn Leu Gly Ile Lys Asp Asn Pro
 50 55 60
 Leu Ser His Ser Val Gly Ala Ile Asn Pro Asp Asp Tyr Asn Val Tyr
 65 70 75 80
 Ser Val Glu Met Tyr Pro Asp Ser Ile Ala Phe Tyr Ile Asn Asp Thr
 85 90 95
 His Thr Phe Thr Tyr Pro Arg Ile Glu Thr Asp Lys Glu Gly Gln Phe
 100 105 110
 Pro Phe Asp Gln Pro Phe Tyr Leu Leu Ile Asp Met Gln Leu Gly Gly
 115 120 125

Ser Trp Val Gly Ala Val Asp Pro Lys Glu Leu Pro Val Glu Met Tyr
 130 135 140
 Val Asp Trp Val Arg Phe Tyr Gln Lys Glu Lys
 145 150 155

<210> 9113
 <211> 71
 <212> PRT
 <213> B.fragilis

<400> 9113
 Thr Ile Arg Pro Ile Leu Leu Leu Tyr Leu His Lys Leu Lys Lys Arg
 1 5 10 15
 Asp Asp Met Lys Tyr Ile Cys Thr Val Cys Asp Phe Ile Tyr Asp Pro
 20 25 30
 Glu Ile Gly Asp Pro Glu Gly Gly Ile Glu Pro Gly Thr Gln Phe Glu
 35 40 45
 Asp Ile Pro Asp Asp Trp Val Cys Pro Leu Cys Gly Val Gly Lys Glu
 50 55 60
 Asp Phe Glu Pro Tyr Asn Gly
 65 70

<210> 9114
 <211> 423
 <212> PRT
 <213> B.fragilis

<400> 9114
 Ala Ala Gly Thr Cys Leu Gly Tyr Gln Ile Ile Leu Leu Ile Ala Asp
 1 5 10 15
 Ala Ser Glu Val Phe Val Ser Leu His Phe Ile Val Ile Asp Lys Val
 20 25 30
 Gly Glu Leu Leu Ala Leu Pro Glu Ile Tyr Gln Phe Gly Asn Lys
 35 40 45
 Val Asp Ala Arg Leu His Gly Met Tyr Lys Thr Arg Leu Gln Arg Asn
 50 55 60
 Gly Gln Thr Leu Arg Leu Thr Ala Glu Leu Arg Ala Leu Gly Leu Ser
 65 70 75 80
 Val Ile Ala His Pro Glu Phe Thr Gln Ile Leu His Val Met His Val
 85 90 95
 Glu Pro His His Val Ser Gln Pro Val Arg Ile Glu Gln Ser Met Cys
 100 105 110
 Thr Leu Ala His Ser Val Phe Gly Ile Ser Leu His Gln Pro Glu Ser
 115 120 125
 Phe Gln Thr Phe Asp His His Thr Cys Arg Gln Val Val Tyr Ile His
 130 135 140
 Ile Arg Asn Thr Arg Thr Lys Cys Phe His Arg Leu Gln Val His Gly
 145 150 155 160
 Val Leu Tyr Leu Val Asn Leu Ala Leu Ala Pro Gly Lys Leu Phe Ile
 165 170 175
 Gly Arg Asn Gly Arg Arg His Ile Ala Cys Ile Thr His Leu Arg Phe
 180 185 190
 Cys Ala Gly Ile Asp Gln Glu Gln Ile Ala Arg Leu Asp Asp Ile Ala
 195 200 205
 Met Ile Met Val Val Glu Arg Leu Ser Val His Arg Ser Asp Gly Ser
 210 215 220
 Lys Arg Lys Val Thr Pro Cys Gly Met Arg His Gly Phe His Gly Cys
 225 230 235 240
 Arg Tyr Phe Pro Leu Ala His Pro Gly Thr Gln Asp Leu His Gly Arg

245 250 255
 Asn Val His Ile Arg Arg Asn Ile Ala Gly Leu Leu Asp Phe Asp Asn
 260 265 270
 Leu Leu Gly Arg Leu Val Val Thr Leu Arg Asp His Arg Thr Asp Lys
 275 280 285
 Arg His Arg Thr Leu Leu Thr Arg Gly Arg His Ser Gln Pro Val His
 290 295 300
 Gln Leu Gln Phe Met Leu Cys Thr Val Gly Arg Gln Val Met Asp Gly
 305 310 315 320
 Leu Ser Leu Leu Tyr Arg Leu Val Gln Ile Ala His Asn Val Gly Arg
 325 330 335
 Arg His Gly Asp Val His Ser His Pro Leu Thr Leu Phe Leu Gln Cys
 340 345 350
 Gly Leu Ser Pro His Pro Tyr Asp Met Ile Asp Gly Gln Phe Ile Thr
 355 360 365
 Glu Tyr Asn Phe Leu Ile Phe Ile Asn Val Asp Tyr Ser Arg Lys Pro
 370 375 380
 Gly Lys Arg Lys Ala Glu Val Val Glu Lys Gly Arg Ile Leu Thr Ile
 385 390 395 400
 Ala Glu Arg Ile Val Leu Val Val Gln Ser Thr Leu Val Val Ser Gln
 405 410 415
 Lys Gln Gln Tyr Ser Gly Ala
 420

<210> 9115
 <211> 66
 <212> PRT
 <213> B.fragilis

<400> 9115
 Ala Leu Ser Ala Ser Asn Trp Gly Thr Trp Thr Ile Thr Phe Phe Ser
 1 5 10 15
 Val Met Ser Val Glu Val Val Leu Leu Pro Phe Val Pro Gln Glu Lys
 20 25 30
 Ala Glu Asn Arg Met Lys Ala Asp Ser Met Asn Ile Glu Phe Leu Phe
 35 40 45
 Ile Ile Met Leu Leu Glu Phe Lys Ala Ser Lys Leu Met Ile Phe Thr
 50 55 60
 Val Gly
 65

<210> 9116
 <211> 70
 <212> PRT
 <213> B.fragilis

<400> 9116
 Tyr Lys Glu Ala Ser Lys Asn Gln Arg Gln Gly Glu Tyr Ile His Leu
 1 5 10 15
 Ile Ala Tyr Tyr Thr Phe Arg Arg His Ser Asp Thr Ile His Pro Asn
 20 25 30
 Leu Leu Thr Arg Thr Lys Thr Gln Ile Ile Lys Gln Glu Glu Asn
 35 40 45
 Ala Tyr Lys Thr His Ile Thr Cys Asn Lys Met Gln His Arg Pro Lys
 50 55 60
 Ile Ser Asn Lys Tyr Ala
 65 70

<210> 9117

<211> 262
 <212> PRT
 <213> B.fragilis

<400> 9117

Met Lys Thr Ala Ile Lys Leu Ile Leu Ile Tyr Leu Gly Ile Gln Leu
 1 5 10 15
 Ile Cys Gly Gly Leu Ile Gly Ile Pro Phe Thr Ile Ile Ala Arg Met
 20 25 30
 Asn Gly Gly Ser Val Asp Ala Thr Arg Val Ser Glu Leu Thr Leu Ala
 35 40 45
 Pro Ser Met Leu Leu Ser Met Ala Val Met Phe Phe Tyr Leu Trp Lys
 50 55 60
 Ala His Tyr Ile Pro Lys Asp Lys Thr Ser Trp Ser Phe Ile Ser Phe
 65 70 75 80
 Pro Phe Leu Ile Ile Thr Phe Leu Ile Gly Leu Ser Met Thr Val Leu
 85 90 95
 Met Asp Met Leu Thr Ala Val Leu Ser Trp Val Pro Asp Ile Leu Glu
 100 105 110
 Gln Gln Phe Asp Ala Leu Gln Ser Gly Trp Leu Gly Ile Val Ala Ile
 115 120 125
 Thr Leu Leu Gly Pro Ile Leu Glu Glu Leu Leu Phe Arg Gly Gly Ala
 130 135 140
 Thr Lys Ala Leu Leu Glu Arg Tyr Ser Pro Arg Lys Ala Ile Phe Leu
 145 150 155 160
 Ser Ala Leu Leu Phe Gly Val Phe His Leu Asn Pro Ala Gln Ile Val
 165 170 175
 Ala Ala Phe Phe Gly Gly Leu Leu Leu Ala Trp Val Tyr Tyr Arg Thr
 180 185 190
 Arg Ser Leu Ile Pro Cys Ile Leu Ile His Ile Val Asn Asn Ser Ile
 195 200 205
 Ser Val Met Leu Ser Leu Thr Tyr Pro Asp Ala Asp Thr Ile Arg Asp
 210 215 220
 Val Thr Gly Thr Thr Pro Tyr Tyr Leu Leu Ile Ala Val Ala Ala Met
 225 230 235 240
 Val Phe Val Gly Cys Phe Leu Arg Ile Lys Gln Val Thr Val Pro Gly
 245 250 255
 Thr Trp Arg Lys Asp Glu
 260

<210> 9118
 <211> 140
 <212> PRT
 <213> B.fragilis

<400> 9118

Arg Asn His Gln His Gln Pro Gln Gln Pro Gln Ser Ala Gly Ala Ala
 1 5 10 15
 His Glu Pro Arg Leu His Gly Asp Gly Arg Gly Thr Tyr Glu Glu Gln
 20 25 30
 Gly Gln Pro Ile Glu Arg Ile Glu Arg Gly His Asp Val Pro Gln Ala
 35 40 45
 Glu Asp Gly Arg Arg Thr Arg Leu His Arg Arg Arg Glu Ala Thr Pro
 50 55 60
 Glu Tyr Ile Asp Asp His His Ala Gly His His Arg Pro Ala Thr Pro
 65 70 75 80
 Leu Leu Pro Arg Arg Arg Val Ile Ala Pro Pro Asp Asp Ser Glu
 85 90 95
 Gly Arg Gly Gly Thr His Arg Ala Gly His Leu Asp His Leu Thr Arg

100 105 110
 Gln Gln Gln Gln Ile Arg Ala Asn Glu Leu Arg His Leu Ser Pro Glu
 115 120 125
 Val Leu Leu Gln Arg Arg Ile His His Arg Arg Arg
 130 135 140

<210> 9119
 <211> 217
 <212> PRT
 <213> B.fragilis

<400> 9119

Ile Ile Ser His Asn Met Lys Arg Arg Leu Asn Ile Leu Cys Leu Leu
 1 5 10 15
 Val Phe Leu Val Phe Cys Tyr Ser Val Phe Asn Met Gly Arg Asp Phe
 20 25 30
 Gly His Gly Phe Ser Glu Gly Met Lys Ile Ser His Ser Gly Asn Gln
 35 40 45
 Ser Val Glu Gln Ala Ile Asn Phe Arg Ile Ala Thr Leu Met Pro Lys
 50 55 60
 Asp Phe Ser Ser Phe Lys Asp Ser Val Tyr Asn Glu Lys Thr Gly Ser
 65 70 75 80
 Tyr Val Pro Val Ala Tyr Thr Gln Met Val Thr Asn Val Lys Val Asp
 85 90 95
 Arg Ser Thr Trp Met Met Val Ala Gln Val Ile Ser Gly Leu Leu Ala
 100 105 110
 Val Phe Ala Ile Ile Ala Ser Thr Val Leu Phe Ile Gln Leu Ile Val
 115 120 125
 Ala Ile Asn Lys Ser Asp Ile Phe Asn Trp Lys Asn Val Arg Arg Leu
 130 135 140
 Arg Trp Leu Gly Val Ala Leu Leu Leu Asn Phe Ile Ser Glu Ala Val
 145 150 155 160
 Pro Ala Leu Met Asn Asp Tyr Glu Leu Ser Ser Val Phe Ser Leu Ser
 165 170 175
 Gly Tyr Ser Met Glu Thr Ser Ile Asp Ser Val Met Leu Val Ile Leu
 180 185 190
 Gly Leu Val Ser Leu Ile Val Gly Glu Val Phe Ala Ile Gly Leu Lys
 195 200 205
 Met Lys Glu Glu Gln Asp Leu Thr Ile
 210 215

<210> 9120
 <211> 304
 <212> PRT
 <213> B.fragilis

<400> 9120

Met Asn Leu Gln Phe Pro Pro Phe Leu His Glu Gly Asp Lys Val Ala
 1 5 10 15
 Ile Val Ser Pro Ser Ser Lys Ile Asp Ser Ile Phe Leu Lys Gly Ala
 20 25 30
 Lys Thr Arg Leu Ser Ser Trp Gly Leu Thr Pro Val Met Gly Asp His
 35 40 45
 Val Arg Ser Ser Trp Gly Ser Tyr Ala Gly Ala Thr His Gln Arg Leu
 50 55 60
 Lys Asp Phe Gln Val Ala Met Asp Asp Glu Glu Ile Lys Ala Ile Leu
 65 70 75 80
 Cys Ser Arg Gly Gly Tyr Gly Ala Val His Leu Leu Asp Lys Leu Asp
 85 90 95

Phe Thr Arg Phe Arg Asn His Pro Lys Trp Leu Ile Gly Phe Ser Asp
 100 105 110
 Ile Thr Ala Leu His Asn Leu Phe Gln Tyr Asn Gly Phe Ala Ser Leu
 115 120 125
 His Ala Pro Met Ala Arg His Leu Ala Val Thr Gly Glu Glu Asp Pro
 130 135 140
 Cys Ser Leu Tyr Leu Arg Asp Ile Leu Phe Gly Lys Leu Pro Gly Tyr
 145 150 155 160
 Lys Cys His Arg His Lys Leu Asn His Leu Gly Gln Ala Lys Gly Ile
 165 170 175
 Leu Arg Gly Gly Asn Met Ala Val Phe His Gly Leu Arg Gly Thr Pro
 180 185 190
 Tyr Asp Ile Pro Pro Glu Gly Thr Ile Leu Phe Ile Glu Asp Val Gly
 195 200 205
 Glu Arg Pro Tyr Ala Ile Glu Arg Met Met Tyr Asn Leu Lys Leu Gly
 210 215 220
 Gly Val Leu Glu Lys Leu Ser Gly Leu Ile Ile Gly Gln Phe Thr Glu
 225 230 235 240
 Tyr Lys Glu Asp Tyr Ser Leu Lys Lys Asp Leu Tyr Ser Thr Leu Asp
 245 250 255
 Ala Leu Val Lys Glu Tyr Asp Phe Pro Ile Cys Tyr Asp Phe Pro Val
 260 265 270
 Gly His Val Thr Glu Asn Leu Pro Leu Ile Asn Gly Ala Glu Val Glu
 275 280 285
 Phe Val Ser Gly Lys Lys Gly Val Glu Leu Leu Ile Asn Pro Pro Ile
 290 295 300

<210> 9121

<211> 64

<212> PRT

<213> B.fragilis

<400> 9121

Phe Asn Pro His Ser Ser Phe Pro Arg Asn Asn Ser Thr Pro Glu Pro
 1 5 10 15
 Asn Val Phe Phe Ser Arg Ala Leu Arg Cys Val Tyr Val Ser Leu Leu
 20 25 30
 Asn Ile Met Val Tyr Ile Lys Val Met Met Ala Lys Ile Gly Thr Lys
 35 40 45
 Asp Glu Leu Thr Lys Glu Ile Lys Gln Ile Arg Phe Thr Ala Glu Gln
 50 55 60

<210> 9122

<211> 610

<212> PRT

<213> B.fragilis

<400> 9122

Ser Gly Phe Lys His Ile Leu Ser Arg Tyr Phe Phe Arg Gly Glu Thr
 1 5 10 15
 Leu Ser Asp Gly Lys Leu Gln Gln His Phe Ser Phe Gly Ile Glu Tyr
 20 25 30
 Phe His Leu Lys Tyr Val Leu Leu Leu Phe Asn His His Tyr Arg Cys
 35 40 45
 Thr Phe His Ala Ile Thr Ala Thr Asp Asn His Arg Glu Val Ile Ala
 50 55 60
 Lys Ala Ala Phe Gly Met Ile Gly Ile Phe Met Cys Met Arg Val Lys
 65 70 75 80
 Ala Asp Ile Glu Arg Cys Phe Leu Gln Lys Phe Thr Pro Lys Pro Gly

				85					90					95			
Thr	Gln	Ile	Leu	Val	Val	Val	Ser	Val	Lys	Arg	Asn	Val	Met	Asn	Gln		
			100						105				110				
Asn	Pro	Leu	Ser	Gly	Phe	Leu	Lys	Phe	Phe	Gly	Ser	Glu	Leu	Thr	Leu		
		115					120					125					
Gln	Lys	Ser	Tyr	Leu	Val	Ile	Thr	Gln	Leu	Arg	Lys	Val	Val	Glu	Ser		
	130					135					140						
Val	Val	Tyr	Pro	Met	Ile	Ile	Arg	Leu	Ile	Phe	Thr	Ala	Ile	Glu	His		
145					150					155					160		
Tyr	Asp	Thr	Gly	Ile	Ser	Pro	Val	Glu	Gly	Ala	Val	Ser	Leu	Ile	Ala		
			165						170					175			
Tyr	Ile	Ile	Glu	Gln	Ala	Val	Gln	Ala	Tyr	Arg	Ile	Gly	Ile	Pro	Asp		
	180						185					190					
Leu	Val	Ile	Thr	Ala	His	Lys	Glu	Asp	Arg	Tyr	Ala	Ile	Thr	Leu	His		
	195						200					205					
Ala	Phe	Gly	Gln	Phe	Ala	Asp	Lys	Gly	Cys	Cys	Leu	Ile	Val	Ile	Gly		
	210					215					220						
Gly	Val	Val	Tyr	Thr	Ile	Ala	Val	Glu	His	Tyr	Lys	Ile	Ile	Val	Asn		
225					230					235					240		
Pro	Leu	Tyr	Leu	Phe	Ala	Gln	Cys	Leu	Lys	Arg	Leu	Arg	Leu	Phe	Met		
			245						250					255			
Gln	Val	Val	Glu	His	His	Gly	Arg	Lys	Thr	Val	Ile	Thr	Gly	Cys	Gly		
			260					265					270				
Gln	Arg	Glu	Leu	Pro	Glu	Phe	Cys	Thr	Gly	Cys	Ile	Ala	Lys	His	Leu		
	275						280					285					
Phe	Val	Gly	Leu	Val	Lys	Gln	Asp	Leu	Leu	Arg	Thr	Gly	Thr	Ile	Ile		
	290				295						300						
Ile	Phe	Leu	Ser	Gly	Leu	Gln	Thr	Ile	Glu	Ala	Asn	Leu	Val	Lys	Ser		
305					310					315					320		
Ile	Ala	Thr	Asn	Asn	Leu	Thr	Ile	Gln	Lys	Gly	Thr	Cys	Ala	Leu	Gln		
			325						330					335			
Ile	Gly	Arg	Val	Arg	Ala	Val	Leu	His	Pro	Ala	Ile	Gly	Arg	His	Val		
	340							345					350				
Gly	Leu	Pro	His	His	Arg	Asp	Ser	Thr	Ser	Tyr	Gly	Ile	Leu	Lys	Ile		
	355						360					365					
Gly	Phe	Gly	Thr	Ala	Asn	Pro	Ile	Leu	Gly	Tyr	Arg	His	Pro	Tyr	Phe		
	370					375					380						
Tyr	His	Lys	Arg	Thr	Met	Ile	Gly	Arg	Gln	Arg	Leu	Ile	Asp	His	Arg		
385					390					395					400		
Gly	Arg	Val	Asp	Asn	Lys	Ser	Arg	Arg	Phe	Leu	Phe	Gln	Ser	Asn	Gln		
			405						410					415			
Val	Val	Glu	Arg	Leu	Leu	Arg	Phe	Gly	Ser	Arg	Ile	Ser	Glu	Leu	Leu		
		420						425					430				
Arg	Val	Gly	Lys	Tyr	Leu	Glu	Cys	Thr	Leu	Gln	Ile	Phe	Asp	Lys	Ala		
	435						440					445					
Gly	Val	Gly	Ile	Arg	Val	Glu	Val	Thr	Gly	Lys	Glu	Glu	Arg	Phe	Pro		
	450					455					460						
Gly	Ile	Gly	Cys	Asn	Gly	Leu	Gln	Asp	Phe	Glu	Arg	Leu	His	Pro	Ile		
465					470					475					480		
Leu	Phe	Gly	Gln	Arg	Lys	Val	Arg	Thr	Arg	Lys	Asp	Ile	Leu	Arg	Glu		
			485						490					495			
Leu	Gly	Asp	Lys	Gln	Arg	Ala	Cys	Leu	Phe	Thr	Ser	Arg	Lys	Gly	Glu		
		500						505					510				
Gly	Leu	His	Thr	Glu	Arg	Ser	Leu	Phe	Arg	Lys	Tyr	Thr	Asp	Ala	Ile		
	515						520					525					
Leu	Ser	Ser	Val	Ile	Ile	Asp	Gly	Arg	Arg	Lys	Ala	Gly	Met	Gln	Leu		
	530					535					540						
Ser	Ala	Phe	Arg	Gln	Phe	Leu	Glu	Asn	Ile	Gly	Pro	Val	Ala	Pro	Gly		
545					550					555					560		

Ser His Ala Val Gln Phe Leu Asp Gly Asn Asp Val Arg Thr Gly Val
 565 570 575
 Val Asp His Ile Gly Tyr Thr Leu Ile Ile Ala Tyr Thr Val His Ala
 580 585 590
 Ile Gly Val Thr Asp Val Val Gly His Gln Ala Gln His Ile Phe Ser
 595 600 605
 Leu Gly
 610

<210> 9123
 <211> 646
 <212> PRT
 <213> B.fragilis

<400> 9123

Thr Met Arg Lys Leu Lys Asn Val Leu Arg Ala Ser Ser Cys Cys Ala
 1 5 10 15
 Phe Ser Ile Leu Met Cys Leu Pro Ala Ala Gly Gln Asn Ala Trp Ser
 20 25 30
 Glu Ala Asp Cys Val Thr Leu Leu Asp Ser Thr Ser Val Thr Val Gln
 35 40 45
 Pro Asn Gly Ser Gly Ser Phe Ala Val Tyr Lys Ser Phe Lys Val Gln
 50 55 60
 Thr Pro Lys Gly Ala Val Asn Asn His Val Ile Lys Tyr Asp Tyr Asp
 65 70 75 80
 Pro Leu Thr Ala Phe Ala Arg Phe Lys Gln Val Thr Val Gln Arg Ala
 85 90 95
 Asn Gly Glu Thr Met Gln Val Asp Val Thr Lys Thr Cys Asp Tyr Ala
 100 105 110
 Ala Pro Ala Arg Ala Ile Tyr Trp Gly Ala Arg Gln Ile Met Leu Glu
 115 120 125
 Leu Gly Arg Leu Glu Pro Gly Asp Val Val Ser Tyr Glu Ile Ser Lys
 130 135 140
 Lys Gly Phe Thr Tyr Ala Leu Leu Ala Gly Ala Glu Asp Asp Asp Ala
 145 150 155 160
 Arg Phe Ile Pro Pro Met Arg Gly Gln Phe Tyr Asp Ile Val Pro Phe
 165 170 175
 Trp Val Asn Glu Pro Thr Arg Arg Lys Val Tyr Val Val Ser Met Pro
 180 185 190
 Met Glu Lys Glu Leu Gln Phe Gln Phe Tyr Asn Gly Val Cys Thr Ser
 195 200 205
 Ser Met Arg Tyr Glu Asp Gly Arg Lys Val Tyr Thr Phe Ala Val Asp
 210 215 220
 Glu Val Leu Pro Phe Arg Lys Glu Pro Asn Met Val Asp Leu Phe Asp
 225 230 235 240
 Glu Ala Pro Lys Leu Met Met Ser Ser Thr Pro Lys Trp Glu Asp Lys
 245 250 255
 Ser Leu Trp Phe His Asp Leu Asn Glu Ala Tyr Gly Ser Phe Ala Ala
 260 265 270
 Leu Pro Glu Ala Gln Lys Lys Val Asp Glu Leu Ile Lys Gly Lys Lys
 275 280 285
 Thr Glu Met Glu Arg Ile Ala Val Leu Thr His Trp Val Ala Asp Asn
 290 295 300
 Ile Arg Tyr Ala Gly Ile Thr Met Gly Glu Gly Glu Gly Phe Thr Leu
 305 310 315 320
 His Asn Thr Lys Met Asn Tyr Thr Asp Arg Cys Gly Val Cys Lys Asp
 325 330 335
 Ile Ala Gly Thr Leu Ile Ser Phe Leu Arg Met Ala Gly Phe Glu Ala
 340 345 350

Tyr Pro Ala Met Thr Met Ala Gly Ser Arg Ile Glu Ser Ile Pro Ala
 355 360 365
 Asp His Phe Asn His Cys Val Ala Val Val Lys Leu Ala Asn Gly Thr
 370 375 380
 Tyr Met Pro Leu Asp Pro Thr Trp Val Pro Phe Cys Arg Glu Leu Trp
 385 390 395 400
 Ser Ser Ala Glu Gln Gln Asn Tyr Leu Pro Gly Ile Pro Gly Gly
 405 410 415
 Ser Asp Leu Cys Leu Thr Pro Val Ser Ala Pro Glu Asn His Tyr Val
 420 425 430
 Arg Ile Thr Ala Asp Asn Lys Ile Asp Ala Lys Gly Thr Leu Lys Gly
 435 440 445
 Ser Phe Thr Ile Thr Ala Glu Gly Gln Ser Asp Ser Ser Ile Arg Arg
 450 455 460
 Ile Phe Thr Gln Gly Trp Gln Thr Glu Trp Gln Ser Thr Met Glu Ser
 465 470 475 480
 Gln Leu Leu Asn Val Ser Pro Lys Ala Arg Met Leu Gly Val Asp Tyr
 485 490 495
 Gly Lys Ala Pro Lys Asp Tyr Gln Ala Gly Pro Ile Arg Ile Thr Phe
 500 505 510
 Arg Tyr Glu Ile Pro Asp Tyr Ala Leu Val Gly Asp Arg Glu Leu Leu
 515 520 525
 Leu Lys Pro Met Val Met Asn Asn Leu Tyr Thr Ser Val Leu Ser Phe
 530 535 540
 Leu Arg Ile Asp Thr Gly Leu Glu Thr Arg Gln Tyr Gly Phe Arg Asp
 545 550 555 560
 Ala Cys Ser Arg Leu Val Glu Leu Asp Glu Thr Ile Ala Leu Pro Arg
 565 570 575
 Gly Tyr Arg Leu Ala Gly Glu Pro Arg Ser Glu Gln Lys Ala Ala Pro
 580 585 590
 Ala Ala Asp Phe Glu Gly Ser Leu Gln Gln Val Gly Asn Lys Leu Val
 595 600 605
 Leu Lys Gln Lys Leu Ala Leu Lys Lys Arg Ile Tyr Arg Ala Ala Asp
 610 615 620
 Trp Glu Gly Phe Arg Ala Val Asn Ala Tyr Lys Ser Phe Ala Asp
 625 630 635 640
 Tyr Leu Ile Val Lys Leu
 645

<210> 9124
 <211> 188
 <212> PRT
 <213> B.fragilis

<400> 9124
 Ser Val Val Lys Leu Ile His Ser Ile Ser Leu Ser Ile Asn Leu Lys
 1 5 10 15
 Ser Arg Ile Asn Met Thr Pro Ile Val Ser Ile Ile Met Gly Ser Thr
 20 25 30
 Ser Asp Leu Pro Val Met Glu Lys Ala Ala Gln Leu Leu Asn Asp Leu
 35 40 45
 His Val Pro Phe Glu Met Asn Ala Leu Ser Ala His Arg Thr Pro Glu
 50 55 60
 Ala Val Glu Glu Phe Ala Lys Asn Ala Arg Ser Arg Gly Ile Lys Val
 65 70 75 80
 Ile Ile Ala Ala Ala Gly Met Ala Ala His Leu Pro Gly Val Ile Ala
 85 90 95
 Ala Ser Thr Pro Leu Pro Val Ile Gly Val Pro Ile Lys Ser Ser Leu
 100 105 110

Asp Gly Met Asp Ala Leu Leu Ala Ile Val Gln Met Pro Pro Gly Ile
 115 120 125
 Pro Val Ala Thr Val Gly Ile Asn Gly Ala Leu Asn Ala Ala Ile Leu
 130 135 140
 Ala Val Gln Met Leu Ser Leu Glu Asp Lys Glu Leu Glu Ala Lys Phe
 145 150 155 160
 Ile Ala Tyr Lys Glu Gly Leu Lys Lys Lys Ile Val Lys Ala Asn Glu
 165 170 175
 Glu Leu Lys Glu Ile Lys Tyr Glu Phe Lys Thr Asn
 180 185

<210> 9125
 <211> 157
 <212> PRT
 <213> B.fragilis

<400> 9125

Ser Tyr Lys Asn Met Ser Gly Leu Tyr Tyr Asn Leu Ala Leu Arg Asn
 1 5 10 15
 Ser Asp Leu Arg Asp Lys Asp Ser Glu Lys Leu Tyr Tyr Cys Val Leu
 20 25 30
 Lys Asn Arg Gly Val Leu Asp Gln Asp Thr Phe Val Asn Tyr Leu Ser
 35 40 45
 Gln Ile Thr Gly Ile Lys Glu Ala Ile Cys Leu Gly Val Leu Ser Lys
 50 55 60
 Leu Gly Ala Ala Val Ile Asn Tyr Leu Lys Asp Gly Gln Ser Val Asp
 65 70 75 80
 Ile Pro His Leu Gly Thr Phe Asn Leu Thr Ala Ser Ser Thr Gly Val
 85 90 95
 Lys Thr Leu Asp Glu Ala Lys Ala Ser Gln Ile Lys Ala Ile Asn Leu
 100 105 110
 Arg Phe Ser Ala Lys Glu Glu Thr Asp Leu Val Leu Ser Arg Cys Ala
 115 120 125
 Leu Thr Arg Ser Val Ser Leu Thr Asn Thr Asn Asp Val Ile Lys Glu
 130 135 140
 Lys Asp Pro Ser Gly Glu Ile Val Asp Asp Pro Thr Ala
 145 150 155

<210> 9126
 <211> 214
 <212> PRT
 <213> B.fragilis

<400> 9126

Ala Phe Lys Asn Arg Ile Glu Met Lys Arg Lys Gly Ile Lys Asn Leu
 1 5 10 15
 Ile Phe Asp Phe Gly Gly Val Leu Ile Asn Leu Asp Arg Gln Arg Cys
 20 25 30
 Ile Glu Asn Phe Arg Lys Leu Gly Leu Glu Lys Val Asp Glu Leu Leu
 35 40 45
 Gly Met Tyr Ser Gln Gln Gly Ile Phe Met Gln His Glu Lys Gly Leu
 50 55 60
 Ile Ser Ser Ala Gln Phe Arg Asp Ser Ile Arg Gly Gln Ile Thr Gln
 65 70 75 80
 Glu Val Thr Asp Glu Gln Ile Asp Ala Ala Trp Asn Ser Phe Leu Val
 85 90 95
 Asp Ile Pro Arg Phe Lys Leu Asp Met Leu Leu Lys Leu Arg Glu Lys
 100 105 110
 Tyr Val Val Tyr Leu Leu Ser Asn Thr Asn Glu Ile His Trp Lys Trp

115 120 125
 Ala Cys Glu His Ala Phe Pro Tyr Arg Gly Phe Arg Val Glu Asp Tyr
 130 135 140
 Phe Glu Lys Met Tyr Leu Ser Tyr Glu Met Lys Met Val Lys Pro Ala
 145 150 155 160
 Glu Glu Ile Phe Arg Gly Val Leu Asp Asp Ala Asn Leu Asp Pro Arg
 165 170 175
 Glu Thr Phe Phe Ile Asp Asp Ser Glu Ala Asn Cys Gln Gly Ala Gln
 180 185 190
 Ala Leu Gly Ile Ser Thr Tyr Thr Val Lys Pro Gly Glu Asp Trp Arg
 195 200 205
 Pro Leu Phe Ala Glu Asn
 210

<210> 9127
 <211> 612
 <212> PRT
 <213> B.fragilis

<400> 9127

Gly Gly Thr Leu Met Arg Lys Leu Leu Leu Leu Phe Ser Ala Leu
 1 5 10 15
 Phe Val Leu Ser Ala Gln Ala Glu Asp Val Leu Arg Leu Met Thr Tyr
 20 25 30
 Asn Val Arg Asn Ala Asn Gly Met Asp Gly Ile Cys Asn Tyr Gln Arg
 35 40 45
 Val Ala Asn Val Ile Asn Asn Ala Arg Pro Asp Ile Val Ala Ile Gln
 50 55 60
 Glu Leu Asp Ser Met Thr Ala Arg Ser Asn Arg Thr Asp Val Leu Lys
 65 70 75 80
 Glu Leu Ala Glu Arg Thr Gln Leu His Pro Cys Phe Ala Pro Ala Ile
 85 90 95
 Asp Tyr Asp Gly Lys Tyr Gly Ile Gly Ile Leu Ser Lys Glu Thr
 100 105 110
 Pro Leu Arg Val Gln Thr Phe Ala Leu Pro Gly Arg Glu Ala Arg
 115 120 125
 Thr Leu Leu Val Ala Glu Phe Pro Glu Tyr Val Phe Ala Cys Thr His
 130 135 140
 Leu Ser Leu Thr Glu Glu Asp Arg Met Lys Ser Leu Glu Ile Leu Lys
 145 150 155 160
 Ser Val Ala Ala Asn Thr Arg Lys Pro Phe Phe Leu Ala Gly Asp Phe
 165 170 175
 Asn Ser Asp Ala Asp Ser Gly Phe Ile Lys Asp Leu Lys Ser Thr Phe
 180 185 190
 Gln Ile Leu Ser Asn Pro Lys Gln Leu Thr Tyr Pro Ala Ser Glu Pro
 195 200 205
 Lys Glu Thr Leu Asp Tyr Leu Ile Ala Leu Lys Gln Glu Thr Pro Thr
 210 215 220
 Phe Val Val Asn Ser Ala Pro Val Ile Asp Glu Pro Leu Ala Ser Asp
 225 230 235 240
 His Arg Pro Phe Val Val Glu Val Arg Met Ala Val Pro Glu Asn Arg
 245 250 255
 Ile Cys Arg Thr Lys Pro Tyr Leu Gln Asn Pro Val Arg Gly Gly Ile
 260 265 270
 Thr Val Met Trp Gln Thr Asn Val Pro Ala Tyr Cys Trp Val Glu Tyr
 275 280 285
 Gly Thr Asp Pro Ser Asn Leu Lys Arg Ala Arg Thr Leu Leu Asp Gly
 290 295 300
 Gln Val Val Cys Gly Asn Thr Leu His Lys Ile Arg Leu Asp Ser Leu

305 310 315 320
 Gln Pro Gly Gln Lys Tyr Tyr Tyr Arg Thr Cys Ser Gln Glu Ile Leu
 325 330 335
 Leu Tyr Gln Ala Tyr Lys Lys Val Phe Gly Asn Thr Ala Arg Thr Glu
 340 345 350
 Leu Arg Glu Phe Thr Leu Pro Ala Ala Gly Asp Asp Ser Phe Thr Ala
 355 360 365
 Val Val Phe Asn Asp Leu His Lys Gln Ser Lys Thr Phe Gln Ala Leu
 370 375 380
 Cys Glu Gln Ile Lys Gly Ile Asp Tyr Asp Phe Val Val Phe Asn Gly
 385 390 395 400
 Asp Cys Val Asp Asp Pro Ala Asn His Asp Gln Ala Thr Ala Phe Ile
 405 410 415
 Ser Glu Leu Thr Glu Gly Val Glu Gly Asp Arg Val Pro Val Phe Phe
 420 425 430
 Met Arg Gly Asn His Glu Ile Arg Asn Ala Tyr Ser Val Gly Leu His
 435 440 445
 Ser Leu Phe Asp Tyr Val Gly Asp Lys Thr Tyr Gly Ser Phe Asn Trp
 450 455 460
 Gly Asp Thr Arg Ile Val Met Leu Asp Cys Gly Glu Asp Lys Pro Asp
 465 470 475 480
 Asp His Trp Val Tyr Tyr Gly Leu Asn Asp Phe Thr Lys Leu Arg Asn
 485 490 495
 Asp Gln Val Gly Phe Leu Lys Arg Glu Leu Ala Ser Lys Glu Phe Lys
 500 505 510
 Lys Ala Ala Lys Arg Ile Leu Ile His His Ile Pro Leu Tyr Gly Asn
 515 520 525
 Asp Tyr Glu Asn Leu Cys Ser Gly Leu Trp Gly Lys Leu Leu Glu Lys
 530 535 540
 Ala Pro Phe Asn Ile Ser Leu Asn Ala His Thr His Glu Tyr Ala Tyr
 545 550 555 560
 His Pro Lys Gly Ser Leu Gly Asn Asn Phe Pro Val Ile Ile Gly Gly
 565 570 575
 Gly Tyr Ser Met Lys Ser Ala Thr Val Met Val Ile Glu Lys Lys Lys
 580 585 590
 Asp Ile Leu Lys Val Lys Val Leu Asn Thr Lys Gly Glu Val Leu Leu
 595 600 605
 Glu Leu Thr Val
 610

<210> 9128

<211> 559

<212> PRT

<213> B.fragilis

<400> 9128

Arg Glu Met Lys Gln Met Leu Gln Ile Tyr Cys Lys Asn Asn Asn Ile
 1 5 10 15
 Ser Lys Glu Phe Pro Ile Gly Ser Ser Leu Leu Asp Ile Tyr Tyr Gly
 20 25 30
 Phe Asn Leu Asn Phe Pro Tyr Gln Val Val Ser Ala Lys Val Asn Asn
 35 40 45
 Arg Ser Glu Gly Leu Asn Phe Arg Val Tyr Asn Asn Lys Asp Val Glu
 50 55 60
 Phe Leu Asp Val Arg Asp Ser Ser Gly Met Arg Thr Tyr Val Arg Ser
 65 70 75 80
 Leu Cys Phe Val Leu Tyr Lys Ala Val Ser Glu Leu Phe Pro Asn Gly
 85 90 95
 Lys Leu Phe Val Glu His Pro Val Ser Lys Gly Tyr Phe Cys Asn Leu

	100		105		110
Arg	Ile Gly	Arg Pro Val Thr	Leu Glu Asp Val Ser	Gln Ile Lys Lys	
	115		120	125	
Arg	Met Gln Glu Ile Ile Ala	Glu Asp Ile Thr Tyr	His Arg Ile Glu		
	130		135	140	
Cys	His Thr Thr Glu Ala Val	Arg Val Phe Ser Glu	Arg Gly Met Asn		
145		150	155	160	
Asp	Lys Val Lys Leu Glu Ser Ser	Gly Ser Ile Tyr Thr Tyr Tyr			
	165		170	175	
Tyr	Thr Leu Gly Thr Ala Asp	Tyr Tyr Tyr Gly Asn	Leu Leu Pro		
	180		185	190	
Ser	Thr Gly Phe Ile His Leu Phe	Asp Leu Val Lys Tyr Tyr Asp Gly			
	195		200	205	
Leu	Leu Leu Arg Ile Pro Asn	Lys Glu Asn Pro Ser Val	Leu Glu Asp		
	210		215	220	
Val	Val Lys Gln Glu Lys Met	Leu Asp Val Phe Lys Glu	His Leu Arg		
225		230	235	240	
Trp	Asn Tyr Ile Met Gly Leu Asn	Asn Val Gly Asp Phe Asn	Ile Ala		
	245		250	255	
Cys	Glu Glu Gly His Ala Thr Asp	Leu Ile Asn Val Ala Glu	Ala Leu		
	260		265	270	
Gln	Glu Lys Lys Ile Ala Gln Ile	Ala Asp Ser Ile Phe His	Arg Gly		
	275		280	285	
Glu	Asn Gly Thr Arg Val Lys	Leu Val Leu Ile Ser Gly	Pro Ser Ser		
	290		295	300	
Ser	Gly Lys Thr Thr Phe Ser	Lys Arg Leu Ser Ile Gln	Leu Met Thr		
305		310	315	320	
Asn	Gly Leu Lys Pro Tyr Pro	Ile Ser Leu Asp Asn Tyr	Phe Val Asp		
	325		330	335	
Arg	Glu Asp Thr Pro Leu Asp	Glu Asn Gly Asn Tyr Asp	Tyr Glu Ser		
	340		345	350	
Leu	Tyr Ala Leu Asp Leu Glu	Leu Phe Asn Thr Gln	Leu Gln Ala Leu		
	355		360	365	
Leu	Arg Gly Glu Glu Val Glu	Leu Pro Arg Tyr Asn	Phe Met Leu Gly		
	370		375	380	
Lys	Lys Glu Tyr Lys Gly Asp	Lys Leu Arg Ile Asp	Glu His Thr Val		
385		390	395	400	
Leu	Ile Leu Glu Gly Ile His	Ala Leu Asn Pro Glu	Leu Thr Pro Gln		
	405		410	415	
Ile	Pro Ala Ala Asn Lys Phe	Lys Ile Tyr Val Ser	Ala Leu Thr Thr		
	420		425	430	
Ile	Ser Leu Asp Asp His Asn	Trp Ile Pro Thr Thr	Asp Asn Arg Leu		
	435		440	445	
Leu	Arg Arg Ile Ile Arg Asp	Phe Asn Tyr Arg Gly	Tyr Ser Ala Gln		
	450		455	460	
Glu	Thr Ile Ser Arg Trp Pro	Ser Val Arg Ala Gly	Glu Asp Lys Trp		
465		470	475	480	
Ile	Phe Pro Tyr Gln Glu Asn	Ala Asp Val Met Phe	Asn Ser Ala Leu		
	485		490	495	
Leu	Phe Glu Phe Ala Val Leu	Arg Cys His Ala Glu	Pro Ile Leu Thr		
	500		505	510	
Ser	Val Pro Arg Asn Cys Pro	Glu Tyr Ala Glu Ala	Tyr Arg Leu Leu		
	515		520	525	
Lys	Phe Ile Lys Tyr Phe Thr	Pro Val Gln Asp Lys	Glu Ile Pro Pro		
	530		535	540	
Thr	Ser Leu Leu Arg Glu Phe	Leu Gly Gly Ser	Ser Phe Lys Tyr		
545		550	555		

<211> 333
 <212> PRT
 <213> B.fragilis

<400> 9129

Asn Pro Val Lys Thr Gly Gly Arg Phe Leu Pro Arg Ile Lys Ile Asn
 1 5 10 15
 Arg Arg Asn Ser Met Gln Ile Ile Arg Asn Ile Pro Gly Val Leu Pro
 20 25 30
 Glu Pro Cys Val Ala Thr Ile Gly Phe Phe Asp Gly Val His Met Gly
 35 40 45
 His Arg Phe Leu Ile Glu Gln Val Arg Glu Leu Ala Ala Ala Arg Gly
 50 55 60
 Leu Arg Ser Ala Leu Ile Thr Phe Pro Ile His Pro Arg Lys Val Met
 65 70 75 80
 Asn Ala Asp Tyr Arg Pro Glu Leu Leu Thr Thr Ser Glu Glu Lys Leu
 85 90 95
 Ala Leu Leu Glu Thr Gly Val Asp Tyr Cys Phe Met Leu Asp Phe
 100 105 110
 Thr Arg Glu Val Ser His Leu Thr Ala His Glu Phe Met Ser Asp Ile
 115 120 125
 Leu Arg Asp Arg Tyr Arg Val Gln Ile Leu Val Ile Gly Tyr Asp His
 130 135 140
 Arg Phe Gly His Asn Arg Ser Glu Gly Phe Glu Asp Tyr Cys Arg Tyr
 145 150 155 160
 Gly Ser Glu Met Gly Ile Glu Val Ile Arg Ala Arg Ala Cys Val Cys
 165 170 175
 Asp Asp Leu His Ile Ser Ser Ser Val Ile Arg Lys Met Leu His Gln
 180 185 190
 Gly Glu Val Asp Arg Ala Ala Arg Cys Leu Gly Tyr Asp Tyr Phe Leu
 195 200 205
 Asp Gly Thr Val Val Ser Gly Tyr Gln Val Gly Arg Lys Ile Gly Phe
 210 215 220
 Pro Thr Ala Asn Leu Ser Val Asp Asp Pro Asp Lys Leu Val Pro Ala
 225 230 235 240
 Asp Gly Val Tyr Ala Val His Val Thr Phe Asp Gly His Thr Tyr Asn
 245 250 255
 Gly Met Leu Asn Ile Gly Thr Arg Pro Thr Ile Gly Asn Gly Pro Glu
 260 265 270
 Arg Ser Ile Glu Val Asn Ile Leu His Phe His Ser Asp Ile Tyr Asp
 275 280 285
 Lys Phe Ile Arg Leu Ser Phe Val Lys Tyr Leu Arg Pro Glu Leu Lys
 290 295 300
 Phe Asp Gly Ile Glu Gly Leu Ile Ala Gln Leu His Gln Asp Ala Ala
 305 310 315 320
 Asp Val Glu Ala Leu Leu Gly Lys Ile Gln Asn Val Asn
 325 330

<210> 9130
 <211> 185
 <212> PRT
 <213> B.fragilis

<400> 9130

Ser Pro Gly Glu Asp Gln Met Phe Leu Asn Pro Val Asn Arg Glu Lys
 1 5 10 15
 Tyr Pro Ala Phe Val Leu Val Pro Gln Cys Pro Glu Lys Asp Tyr Trp
 20 25 30
 Ala Tyr Thr Ser Arg Pro Ser Ser Phe Ile Pro Ser Glu Met Pro Val

35 40 45
 Gly Gln Glu Ile Thr Pro Val Leu Arg Ala Val Lys Glu Leu Leu Asp
 50 55 60
 Thr Tyr Leu Asp Leu Pro Gln Val Asp Arg Asn Arg Ile Tyr Val Val
 65 70 75 80
 Gly Leu Ser Met Gly Gly Met Ala Thr Tyr Asp Leu Ala Val Arg Phe
 85 90 95
 Pro Asp Thr Phe Ala Ala Ala Val Pro Ile Cys Gly Thr Val Asn Pro
 100 105 110
 Val Arg Leu Ala Asp Ala Ala Asn Val Arg Phe Arg Ile Phe His Gly
 115 120 125
 Asp Ala Asp Asn Val Val Pro Val Glu Gly Ser Arg Gly Ala Tyr Lys
 130 135 140
 Ala Leu Lys Asn Leu Gly Ala Glu Val Glu Tyr Ile Glu Phe Pro Gly
 145 150 155 160
 Cys Asn His Gly Ser Trp Asn Pro Ala Phe Asn Tyr Pro Gly Phe Met
 165 170 175
 Glu Trp Val Phe Ala Gln Arg Lys Arg
 180 185

<210> 9131

<211> 526

<212> PRT

<213> B.fragilis

<400> 9131

Leu Cys His Cys Leu Lys Pro Asn Arg Met Lys Ile Ser Thr Leu Ile
 1 5 10 15
 Leu Thr Ile Leu Val Cys Phe Ser Thr Ile Val Asp Ala Gln Gly Thr
 20 25 30
 Gln Asn Arg Ala Asn Glu Leu Met Lys Gln Ala Gln Ser Ser Leu Glu
 35 40 45
 Gln Lys Glu Tyr Thr Lys Ala Arg Tyr Leu Phe Ile Gln Ala Tyr Gly
 50 55 60
 Ala Phe Ala Thr Gln Glu Asn Tyr Pro Lys Ala Val Glu Cys Gly Ile
 65 70 75 80
 Gln Gly Ala Ala Leu Tyr His Arg Glu Asn Tyr Tyr Lys Glu Ala Phe
 85 90 95
 Asp Leu Cys Arg Gly Met Asp Gln Leu Val Trp Ala Gly Glu Gln Lys
 100 105 110
 Gln Gln Lys Gln Phe Tyr Pro Leu Arg Phe Gln Ile Thr Lys Glu Arg
 115 120 125
 Leu Gln Met Tyr Ile Gly Leu Lys Asn Ala Ala Gln Ala Lys Ile Gln
 130 135 140
 Leu Asp Lys Leu Ala Glu Thr Val Gly Leu Ala Lys Asn Asp Ser Leu
 145 150 155 160
 Ser Glu Asn Leu Leu Tyr Thr Gln Ala Ser Tyr Tyr Tyr Thr Phe Gly
 165 170 175
 Gln Asn Thr Gln Gly Asp Ala Cys Phe Gln Lys Leu Ile Asn Gln Tyr
 180 185 190
 Lys Ala Gln Lys Asn Tyr Asp Lys Val Asn Glu Cys Tyr Lys Lys Leu
 195 200 205
 Ile Ala Ile Gly Arg Lys Ser Asn Asn Ala Ser Leu Val Ala Arg Thr
 210 215 220
 Tyr Glu Asn Phe Ile Val Trp Thr Asp Ser Val Lys Ala Met Thr Ala
 225 230 235 240
 Gln Asp Glu Leu Asn Val Leu Lys Arg Lys Tyr Asp Glu Ser Gln Gln
 245 250 255
 Ile Ile Gln Glu Lys Glu Asp Thr Leu Ser Gly Lys Gln Tyr Met Ile

260	265	270
Val Gly Leu Cys Thr Leu Val	Val Ile Leu Ile Ala Gly	Leu Ile Phe
275	280	285
Val Ala Ile Val Leu Leu Arg	Phe Ile Ala Gly Asn Arg	Lys Leu Lys
290	295	300
Lys Ser Val Gln Ile Ala Asn	Glu His Asn Glu Leu Lys	Thr Gln Phe
305	310	315
Ile Gln Asn Ile Ser Ala Gln	Met Glu Pro Thr Leu Asp	Thr Leu Ala
325	330	335
Ser Ser Ala Ala Glu Leu Ser	Asp Lys Ala Pro Gln Gln	Ala Gln Gln
340	345	350
Met Gln Gly Gln Val Ala Ala	Leu Lys Lys Phe Ser Asn	Asp Ile Gln
355	360	365
Glu Leu Ser Thr Leu Glu Asn	Ser Leu Thr Glu Pro Tyr	Glu Met Lys
370	375	380
Glu Ile Asn Val Asn Thr Phe	Cys Glu Ala Thr Met Asp	Lys Val Lys
385	390	395
Glu Phe Val Gln Pro Glu Val	Ser Thr Val Val Asn Ala	Ala Lys Leu
405	410	415
Gln Ile Lys Thr Asn Pro Glu	Gln Leu Glu Arg Ile Leu	Ile His Leu
420	425	430
Leu Lys Asn Ala Ala Glu Tyr	Thr Glu Ser Gly Lys Ile	Phe Leu Asp
435	440	445
Phe Lys Lys Arg Gly Ala His	Thr His Gln Phe Ile Ser	Asp Thr
450	455	460
Gly Thr Gly Ile Pro Val Glu	Lys Gln Glu Asn Leu Phe	Lys Pro Phe
465	470	475
Thr Glu Ile Lys Asp Leu Thr	Glu Gly Asp Gly Leu Gly	Leu Pro Ile
485	490	495
Cys Ala Leu Ile Ala Thr Lys	Met Asn Gly Ser Leu Thr	Leu Asp Thr
500	505	510
Ser Tyr Thr Lys Gly Ser Arg	Phe Val Leu Glu Leu His	Thr
515	520	525

<210> 9132

<211> 562

<212> PRT

<213> B.fragilis

<400> 9132

Phe Asn Val Cys Ile Cys Met Thr Ala Lys Asn Asp Asp Tyr Phe His
1 5 10 15
Leu Gly Leu Thr Asp Gln Glu Val Leu Gln Ser Arg Glu Lys Tyr Gly
20 25 30
Ala Asn Leu Leu Thr Pro Pro Lys Arg Pro Ser Leu Leu Lys Leu Tyr
35 40 45
Leu Glu Lys Phe Glu Asp Pro Val Val Arg Val Leu Leu Ile Ala Ala
50 55 60
Val Phe Ser Leu Ile Ile Ser Val Ile Glu Asn Glu Tyr Ala Glu Thr
65 70 75 80
Ile Gly Ile Ile Ala Ala Ile Leu Leu Ala Thr Gly Ile Gly Phe Tyr
85 90 95
Phe Glu Tyr Asp Ala Asn Lys Lys Phe Asp Leu Leu Asn Ala Val Asn
100 105 110
Glu Glu Thr Leu Val Lys Val Ile Arg Asn Gly Arg Ile Gln Glu Ile
115 120 125
Pro Arg Lys Asp Val Val Val Gly Asp Ile Val Val Leu Glu Thr Gly
130 135 140
Glu Glu Ile Pro Ala Asp Gly Glu Leu Ile Glu Ala Ile Ser Leu Gln

145		150		155		160									
Val	Asn	Glu	Ser	Asn	Leu	Thr	Gly	Glu	Pro	Val	Ile	Asn	Lys	Thr	Ile
				165					170					175	
Ile	Glu	Ala	Asp	Phe	Asp	Glu	Glu	Ala	Thr	Tyr	Ala	Ser	Asn	Leu	Val
			180					185					190		
Met	Arg	Gly	Thr	Thr	Val	Val	Asp	Gly	His	Gly	Ser	Met	Lys	Val	Leu
		195					200					205			
Arg	Val	Gly	Asp	Ala	Thr	Glu	Ile	Gly	Lys	Val	Ala	Arg	Gln	Ser	Thr
		210				215					220				
Glu	Gln	Thr	Thr	Glu	Pro	Thr	Pro	Leu	Asn	Ile	Gln	Leu	Thr	Lys	Leu
225					230					235					240
Ala	Asn	Leu	Ile	Gly	Lys	Ile	Gly	Phe	Thr	Val	Ala	Gly	Leu	Ala	Phe
				245				250						255	
Leu	Ile	Phe	Phe	Ile	Lys	Asp	Val	Val	Leu	Tyr	Phe	Asp	Phe	Gly	Ala
			260					265					270		
Leu	Asn	Gly	Trp	His	Asp	Trp	Leu	Pro	Val	Leu	Glu	Arg	Thr	Leu	Lys
		275					280					285			
Tyr	Phe	Met	Met	Ala	Val	Thr	Leu	Ile	Val	Val	Ala	Val	Pro	Glu	Gly
		290				295					300				
Leu	Pro	Met	Ser	Val	Thr	Leu	Ser	Leu	Ala	Leu	Asn	Met	Arg	Arg	Met
305					310					315					320
Leu	Ala	Thr	Asn	Asn	Leu	Val	Arg	Lys	Met	His	Ala	Cys	Glu	Thr	Met
				325				330						335	
Gly	Ala	Ile	Thr	Val	Ile	Cys	Thr	Asp	Lys	Thr	Gly	Thr	Leu	Thr	Gln
			340					345					350		
Asn	Leu	Met	Gln	Val	His	Glu	Pro	Asn	Phe	Tyr	Gly	Leu	Lys	Asp	Gly
		355					360					365			
Gly	Lys	Leu	Thr	Asp	Asp	Asp	Ile	Ser	Arg	Leu	Ile	Ala	Glu	Gly	Ile
		370				375					380				
Ser	Ala	Asn	Ser	Thr	Ala	Phe	Leu	Glu	Glu	Thr	Gly	Lys	Gly	Glu	Lys
385					390					395					400
Pro	Lys	Gly	Val	Gly	Asn	Pro	Thr	Glu	Val	Ala	Leu	Leu	Leu	Trp	Leu
				405				410						415	
Asn	Ser	Gln	Lys	Arg	Asn	Tyr	Leu	Glu	Leu	Arg	Glu	Gly	Ala	Arg	Val
			420					425					430		
Leu	Asp	Gln	Leu	Thr	Phe	Ser	Thr	Glu	Arg	Lys	Phe	Met	Ala	Thr	Leu
		435					440					445			
Val	Lys	Ser	Pro	Leu	Ile	Gly	Lys	Lys	Val	Leu	Tyr	Ile	Lys	Gly	Ala
		450				455					460				
Pro	Glu	Ile	Val	Leu	Gly	Lys	Cys	Lys	Glu	Val	Ile	Leu	Asp	Gly	Arg
465					470					475					480
Arg	Val	Asp	Ser	Val	Glu	Tyr	Arg	Ser	Thr	Val	Glu	Ala	Gln	Leu	Leu
				485					490					495	
Gly	Tyr	Gln	Asn	Met	Ala	Met	Arg	Thr	Leu	Gly	Phe	Ala	Phe	Arg	Leu
			500					505					510		
Val	Glu	Asp	Asn	Glu	Pro	Asp	Asp	Cys	Val	Ala	Leu	Val	Ser	Glu	Asn
		515					520					525			
Asn	Leu	Asn	Phe	Leu	Gly	Val	Val	Ala	Ile	Ser	Arg	Pro	Ile	Arg	Ser
		530				535					540				
Asp	Val	Pro	Ala	Ala	Val	Ala	Lys	Cys	His	Arg	Glu	Val	Leu	Val	Ser
545					550					555					560
Arg	Leu														

<210> 9133
 <211> 575
 <212> PRT
 <213> B.fragilis

<400> 9133

Thr Met Met Trp Gln Ile Val Leu Ser Leu Val Cys Val Ala Phe Leu
 1 5 10 15
 Gly Ala Ile Leu Trp Glu Lys Arg Gln Gly Lys Leu Met Gln Ser Ala
 20 25 30
 Ser Asp Arg Lys Leu Glu Asn Val Asn Cys Leu Phe Asp Ala Ile Leu
 35 40 45
 Thr His Ile His Ala Tyr Val Leu Val Ile Asp Ser Asp Phe Lys Val
 50 55 60
 Leu Lys Thr Asn Tyr Tyr Asp Leu Thr His Leu Ser Pro Asp Gly Lys
 65 70 75 80
 Glu Lys Arg Val Gly Asp Leu Leu Gln Cys Arg Asn Ala Leu Ser Ala
 85 90 95
 Lys Gly Gly Cys Gly Thr His Ala Phe Cys Gln Glu Cys Pro Val Arg
 100 105 110
 Gly Ala Ile Gly Asn Ala Phe Arg Gln Lys Lys Glu Phe Thr Asp Leu
 115 120 125
 Gln Ser Ser Leu Asn Ile Ala Ile Asp Glu His Glu Phe Val Lys Cys
 130 135 140
 Asp Val Met Ile Ser Gly Val Phe Met Thr Leu Asp Ser Glu Glu Arg
 145 150 155 160
 Met Val Leu Thr Val His Asp Ile Thr Ser Ile Lys Gln Thr Glu Glu
 165 170 175
 Ala Leu Ala Glu Ala Lys Glu Lys Ala Glu Asn Ala Asp Arg Ser Lys
 180 185 190
 Ser Ala Phe Leu Ala Asn Met Ser His Glu Ile Arg Thr Pro Leu Asn
 195 200 205
 Ala Ile Val Gly Phe Ser Glu Leu Leu Ala Ala Asn Thr Glu Glu
 210 215 220
 Glu Lys Gln Lys Tyr Leu Glu Ile Leu His Thr Asn Ser Glu Leu Leu
 225 230 235 240
 Leu Gln Leu Val Asn Asp Ile Leu Asp Leu Ser Lys Ile Glu Ala Gly
 245 250 255
 Thr Leu Glu Phe Val Tyr Ser Asp Val Asp Ile Asn Leu Leu Leu Asn
 260 265 270
 Asp Leu Glu Gln Leu Phe Arg Met Lys Ile Gly Ser Asn Ser Pro Val
 275 280 285
 Gln Ile Ile Thr Glu Ser Gly Leu Pro Ser Cys Met Val His Thr Asp
 290 295 300
 Arg Asn Arg Ile Ala Gln Val Val Ser Asn Phe Val Ser Asn Ala Ile
 305 310 315 320
 Lys Phe Thr Thr Glu Gly Ser Ile Arg Ile Gly Tyr Gln Ser Ser Glu
 325 330 335
 Asn Gly Leu Arg Phe Tyr Val Ser Asp Thr Gly Ser Gly Ile Ser Ala
 340 345 350
 Asp Lys Leu Glu Gly Val Phe Asp Arg Phe Val Arg Leu Gln Ser Asp
 355 360 365
 Lys Asn Gly Asn Gly Leu Gly Leu Ser Ile Cys Lys Thr Ile Val Asn
 370 375 380
 Lys Leu Gly Gly Glu Ile Gly Ala Glu Ser Glu Val Gly Lys Gly Ser
 385 390 395 400
 Thr Phe Trp Phe Thr Leu Pro Glu His Ser Asp Ile Lys Pro Lys Val
 405 410 415
 Ile Ile Glu Lys Glu Gln Glu Glu Leu Pro Ser Ala Val Arg Val Pro
 420 425 430
 Val Ile Asp Ala Gly Ser Asp Lys Lys Leu Ser Ile Leu Val Ala Glu
 435 440 445
 Asp Met Glu Asp Asn Tyr Arg Leu Cys Glu Ala Ile Leu Ala Ser Arg
 450 455 460

Tyr Glu Leu His Trp Ala His Asn Gly Glu Glu Ala Ile Ser Leu Phe
 465 470 475 480
 Leu Lys Phe Gln Pro Asp Ile Ile Leu Met Asp Ile Arg Met Pro Glu
 485 490 495
 Val Asn Gly Tyr Glu Ala Thr Glu Ala Ile Arg Gln Met Ser Ala Thr
 500 505 510
 Val Pro Ile Ile Ala Leu Thr Ala Phe Ala Tyr Glu Glu Asp Arg Gln
 515 520 525
 Lys Ile Met His Ser Gly Phe Thr Asp Phe Pro Asp Glu Ala His Phe
 530 535 540
 Val Lys Ser Thr Val Gly Lys Thr Gly Ile Leu Lys Lys Asp Leu Arg
 545 550 555 560
 Asn Ile Leu Tyr Arg Ile Tyr Val Val Leu Leu Gln Leu Leu Ile
 565 570 575

<210> 9134
 <211> 90
 <212> PRT
 <213> B.fragilis

<400> 9134
 Ala Gly Ile Arg Trp Asn Gly Leu Gln Thr Ile Ser Gly Asp Pro Trp
 1 5 10 15
 Lys Glu Asp Val Ser Lys Leu Ala Phe Thr Thr Asp Tyr Thr Asn Val
 20 25 30
 Tyr Arg Trp Ile Leu Leu Ser Ile Asn Arg Leu Ser Ser Ser Cys Glu
 35 40 45
 Val Leu Tyr His Ser Val Val Ser Tyr Gly Ile Pro Pro Phe Cys Arg
 50 55 60
 Ser Arg Ser Val Glu Leu Leu Ser Cys Ala Ser Leu Pro Met Gln Leu
 65 70 75 80
 Cys Gly Glu Thr Gly Phe Arg Asp Ile Phe
 85 90

<210> 9135
 <211> 515
 <212> PRT
 <213> B.fragilis

<400> 9135
 Arg Lys Asn Arg Arg Glu Arg Gly Arg His Gly Gly Gly Val Pro Glu
 1 5 10 15
 Arg Tyr Ser Arg Pro Leu Pro Trp Arg Asp Gly Tyr Cys Ser Ala Val
 20 25 30
 Asn Leu Ile Cys Phe Ile Ser Phe Val Asn Ser Ser Phe Val Pro Ile
 35 40 45
 Phe Ala Ile Ile Thr Leu Ile Tyr Thr Ile Met Phe Ser Lys Glu Thr
 50 55 60
 Tyr Thr Gln Arg Arg Ala Leu Leu Lys Lys Thr Leu Gly Ser Gly Val
 65 70 75 80
 Leu Leu Phe Leu Gly Asn Asp Glu Cys Gly Leu Asn Tyr Glu Asp Asn
 85 90 95
 Thr Phe Arg Tyr Arg Gln Asp Ser Thr Phe Leu Tyr Tyr Phe Gly Leu
 100 105 110
 Ser Phe Ala Gly Leu Ser Ala Ile Ile Asp Ile Asp Glu Asp Lys Glu
 115 120 125
 Ile Ile Phe Gly Asp Glu Leu Thr Ile Asp His Ile Val Trp Met Gly
 130 135 140
 Thr Gln Pro Thr Leu Lys Glu Lys Ser Glu Arg Val Gly Val Asp Ile

145 150 155 160
 Thr Met Pro Ser Ala Asp Ile Val Ser Tyr Leu His Lys Ala Val Gln
 165 170 175
 Lys Gly Gln Ala Ile His Tyr Leu Pro Pro Tyr Arg Ala Glu His Lys
 180 185 190
 Leu Lys Leu Met Asp Trp Leu Gly Val Pro Ser Ala Arg Gln Glu Gly
 195 200 205
 Ser Val Pro Phe Ile Arg Ala Val Ile Ala Gln Arg Asn Tyr Lys Ser
 210 215 220
 Ser Glu Glu Ile Val Glu Ile Glu Lys Ala Cys Asp Ile Thr Ala Asp
 225 230 235 240
 Met His Ile Thr Ala Met Lys Ile Leu Arg Pro Gly Met Arg Glu Trp
 245 250 255
 Glu Val Ser Ala Ala Met Glu Ala Val Ala His Ala Ala Gly Gly Asp
 260 265 270
 Leu Ser Phe Ala Thr Ile Ala Thr Val Asn Gly Gln Thr Leu His Asn
 275 280 285
 His Tyr His Gly Asn Ile Val Lys Pro Gly Asp Leu Phe Leu Ile Asp
 290 295 300
 Ala Gly Ala Glu Thr Glu Met Gly Tyr Ala Gly Asp Met Ser Ser Thr
 305 310 315 320
 Val Pro Ala Asp Lys Lys Phe Thr Arg Arg Gln Arg Glu Val Tyr Glu
 325 330 335
 Ile Gln Asn Ala Met His Leu Glu Ser Val Lys Ala Leu Arg Pro Gly
 340 345 350
 Ile Pro Tyr Met Asp Val Tyr Asp Leu Ser Ala Arg Val Met Val Glu
 355 360 365
 Gly Leu Lys Gly Leu Gly Leu Met Lys Gly Asn Ala Glu Asp Ala Val
 370 375 380
 Arg Glu Gly Ala His Ala Leu Phe Tyr Pro His Gly Leu Gly His Met
 385 390 395 400
 Met Gly Leu Asp Val His Asp Met Glu Asn Leu Gly Glu Leu Trp Val
 405 410 415
 Gly Tyr Asn Gly Gln Pro Lys Ser Thr Gln Phe Gly Arg Lys Ser Gln
 420 425 430
 Arg Leu Ala Ile Pro Leu Glu Pro Gly Phe Val His Thr Val Glu Pro
 435 440 445
 Gly Ile Tyr Phe Ile Pro Glu Leu Ile Asp Leu Trp Lys Gly Gln Lys
 450 455 460
 Lys Phe Thr Asp Phe Ile Asn Tyr Asp Lys Val Glu Thr Tyr Lys Asp
 465 470 475 480
 Phe Gly Gly Ile Arg Asn Glu Glu Asp Tyr Leu Ile Thr Glu Thr Gly
 485 490 495
 Ala Arg Arg Leu Gly Lys Lys Ile Pro Leu Thr Pro Asp Glu Val Glu
 500 505 510
 Ala Leu Arg
 515

<210> 9136

<211> 496

<212> PRT

<213> B.fragilis

<400> 9136

Ser Ile Lys Arg Met Ala Gln Gly Ser Arg Gln Ile Gln Ser Gln Ala
 1 5 10 15
 Gln Gln Gln Ile Gln Thr Leu Ser Pro Gln Gln Ile Leu Val Val Lys
 20 25 30
 Leu Leu Glu Leu Pro Ala Val Glu Leu Glu Asp Arg Val His Ala Glu

35	40	45
Leu Leu Glu Asn Pro Ala Leu Glu Glu Gly Lys Glu Glu Ser Thr Ser		
50	55	60
Asp Glu Thr Thr Pro Ala Glu Thr Ser Glu Gly Glu Thr Glu Gly Asp		
65	70	75
Thr Asp Tyr Asp Ser Leu Ser Asp Tyr Leu Thr Glu Asp Asp Ile Pro		
85	90	95
Asp Tyr Lys Leu Gln Glu Asn Asn Arg Ser Lys Gly Glu Gln Ala Glu		
100	105	110
Glu Ile Pro Phe Ser Asp Ala Thr Ser Phe Tyr Glu Ile Leu Arg Glu		
115	120	125
Gln Leu Gly Glu Arg Asn Leu Thr Glu His Gln Arg Glu Leu Ala Glu		
130	135	140
Tyr Leu Ile Gly Ser Leu Asp Asp Asp Gly Leu Leu Arg Lys Ser Leu		
145	150	155
Glu Ser Ile Gly Asp Glu Leu Ala Ile Tyr Ala Gly Ile Asn Ala Thr		
165	170	175
Glu Glu Glu Leu Glu Glu Ala Leu Arg Ile Val Gln Asp Phe Asp Pro		
180	185	190
Pro Gly Leu Gly Ala Arg Ser Leu Gln Glu Cys Leu Leu Ile Gln Ile		
195	200	205
Arg Arg Lys Lys Gln Ser His Cys Thr Asp Pro Leu Leu Glu Thr Glu		
210	215	220
Glu Glu Ile Ile Ser Glu Cys Tyr Glu Glu Phe Thr Arg Lys His Trp		
225	230	235
Glu Lys Ile Ile Lys Lys Leu Gly Leu Asp Glu Glu His Phe Tyr Lys		
245	250	255
Ala Leu Glu Glu Ile Thr Lys Leu Asn Pro Arg Pro Gly Ala Ser Leu		
260	265	270
Gly Glu Ala Ile Gly Arg Asn Leu Gln Gln Ile Val Pro Asp Phe Ile		
275	280	285
Val Asp Thr Tyr Asp Asp Gly Thr Ile Asn Ile Ser Leu Asn Asn Arg		
290	295	300
Asn Leu Pro Glu Leu Arg Met Ser Arg Asp Phe Thr Glu Met Val Glu		
305	310	315
Glu His Thr Lys Asn Lys Ala Asn Gln Ser Lys Glu Ser Lys Glu Ala		
325	330	335
Met Met Phe Leu Lys Gln Lys Met Asp Ala Ala Gln Gly Phe Ile Asp		
340	345	350
Ala Val Lys Gln Arg Gln Asn Thr Leu Met Thr Thr Met Gln Ala Ile		
355	360	365
Ile Asp Leu Gln Arg Pro Phe Phe Leu Glu Gly Asp Glu Ser Leu Leu		
370	375	380
Arg Pro Met Ile Leu Lys Asp Val Ala Glu Arg Thr Gly Leu Asp Ile		
385	390	395
Ser Thr Ile Ser Arg Val Ser Asn Ser Lys Tyr Val Gln Thr Asn Tyr		
405	410	415
Gly Ile Tyr Pro Leu Lys Phe Phe Phe Ser Asp Gly Tyr Thr Thr Glu		
420	425	430
Asp Gly Glu Glu Met Ser Val Arg Glu Ile Arg Lys Ile Leu Lys Glu		
435	440	445
Cys Ile Asp Ser Glu Asp Lys Lys Lys Pro Leu Thr Asp Asp Glu Leu		
450	455	460
Ala Glu Ile Leu Lys Glu Lys Gly Tyr Pro Ile Ala Arg Arg Thr Val		
465	470	475
Ala Lys Tyr Arg Gln Leu Asn Ile Pro Val Ala Arg Leu Arg Lys		
485	490	495

<210> 9137

<211> 80
 <212> PRT
 <213> B.fragilis

<400> 9137

Lys	Ile	Asn	Arg	Ile	Met	Ala	Ile	Ile	Val	Asn	Leu	Asp	Ile	Met	Met
1				5					10				15		
Ala	Arg	Arg	Lys	Ile	Ser	Leu	Gly	Glu	Leu	Ala	Glu	Lys	Ile	Asp	Ile
			20					25					30		
Thr	Pro	Ala	Asn	Leu	Ser	Ile	Leu	Lys	Thr	Gly	Lys	Ala	Lys	Ala	Ile
		35					40					45			
Arg	Phe	Ser	Thr	Leu	Glu	Ala	Ile	Cys	Arg	Val	Leu	Asp	Cys	Gln	Pro
	50					55					60				
Gly	Asp	Ile	Leu	Glu	Tyr	Gln	Val	Asp	Glu	Glu	Asp	Gly	Gly	Thr	Ser
65					70					75					80

<210> 9138
 <211> 490
 <212> PRT
 <213> B.fragilis

<400> 9138

Lys	Lys	Leu	Ser	Thr	Ser	Leu	Lys	Gln	Thr	Lys	Lys	Met	Asp	Leu	Phe
1				5					10				15		
Asn	Tyr	Ser	Arg	Arg	Glu	Thr	Ser	Glu	Val	Asn	Ile	Gly	Ala	Val	Pro
			20					25					30		
Leu	Gly	Gly	Pro	Asn	Pro	Ile	Arg	Ile	Gln	Ser	Met	Thr	Asn	Thr	Pro
			35				40					45			
Thr	Gln	Asp	Thr	Glu	Ala	Cys	Val	Ala	Gln	Ala	Lys	Arg	Ile	Val	Asp
	50					55					60				
Ala	Gly	Gly	Glu	Tyr	Val	Arg	Leu	Thr	Thr	Gln	Gly	Val	Lys	Glu	Ala
65					70					75					80
Glu	Asn	Leu	Met	Asn	Ile	Asn	Ile	Gly	Leu	Arg	Ser	Thr	Gly	Tyr	Met
				85					90					95	
Val	Pro	Leu	Val	Ala	Asp	Val	His	Phe	Ser	Pro	Lys	Val	Ala	Asp	Val
			100					105					110		
Ala	Ala	Gln	Tyr	Ala	Glu	Lys	Val	Arg	Ile	Asn	Pro	Gly	Asn	Tyr	Val
		115					120					125			
Asp	Pro	Gly	Arg	Thr	Phe	Lys	Gln	Leu	Glu	Tyr	Thr	Asp	Glu	Glu	Tyr
	130					135						140			
Ala	Ala	Glu	Leu	Gln	Lys	Ile	Arg	Asp	Arg	Phe	Val	Pro	Phe	Leu	Asn
145					150					155					160
Ile	Cys	Lys	Glu	Asn	His	Thr	Ala	Val	Arg	Ile	Gly	Val	Asn	His	Gly
				165					170					175	
Ser	Leu	Ser	Asp	Arg	Ile	Met	Ser	Arg	Tyr	Gly	Asp	Thr	Pro	Glu	Gly
			180					185					190		
Met	Val	Glu	Ser	Cys	Met	Glu	Phe	Leu	Arg	Ile	Cys	Val	Asp	Glu	Lys
		195					200					205			
Phe	Thr	Asp	Val	Val	Ile	Ser	Ile	Lys	Ala	Ser	Asn	Thr	Val	Val	Met
	210					215						220			
Val	Lys	Thr	Val	Arg	Leu	Leu	Val	Ser	Val	Met	Glu	Gln	Glu	Gly	Met
225					230					235					240
Ser	Phe	Pro	Leu	His	Leu	Gly	Val	Thr	Glu	Ala	Gly	Asp	Gly	Glu	Asp
				245					250					255	
Gly	Arg	Ile	Lys	Ser	Ala	Leu	Gly	Ile	Gly	Ala	Leu	Leu	Ala	Asp	Gly
			260					265					270		
Leu	Gly	Asp	Thr	Ile	Arg	Val	Ser	Leu	Ser	Glu	Glu	Pro	Glu	Ala	Glu
		275					280					285			
Ile	Pro	Val	Ala	Arg	Lys	Leu	Val	Asp	Tyr	Ile	Thr	Ser	Arg	Arg	Asn

290 295 300
 His Pro Tyr Ile Pro Gly Met Glu Ala Pro Asp Phe Asn Tyr Leu Ser
 305 310 315 320
 Pro Val Arg Arg Lys Thr Arg Pro Val Arg Asn Ile Gly Gly Asp His
 325 330 335
 Leu Pro Val Val Leu Ala Asp Arg Met Asp Gly Arg Met Glu Thr His
 340 345 350
 Pro Gln Phe Thr Pro Asp Tyr Ile Tyr Ala Gly Arg Ala Leu Pro Glu
 355 360 365
 Gln Thr Glu Pro Gly Val Gln Tyr Ile Leu Asp Ala Asp Val Trp Lys
 370 375 380
 Gly Glu Pro Asp Thr Trp Pro Ala Phe Asn Tyr Ala Gln Leu Glu Leu
 385 390 395 400
 Met Val Thr Cys Val Ala Glu Leu Lys Phe Leu Phe Tyr Pro Leu His
 405 410 415
 Gly Ala Tyr Arg Gly Ser Cys Arg Met Pro Glu Ala Thr Pro Arg Ser
 420 425 430
 Ser Arg Cys Leu Thr Lys Gln Pro Pro Glu Pro Cys Arg Arg Thr Ser
 435 440 445
 Cys Pro Gly Thr Ser Thr Asp Gly Gly Gly Ile Thr Glu Ser Gly Tyr
 450 455 460
 Leu Leu Pro Thr Leu Cys Arg Arg Tyr Ser Arg Arg Leu Ala Gly Gln
 465 470 475 480
 Ser Arg Cys Gly Tyr Gly Ser Leu Asp Leu
 485 490

<210> 9139

<211> 224

<212> PRT

<213> B.fragilis

<400> 9139

Arg Ser Thr Arg Ser Ala Ser Pro Phe Pro Gly Gly Gln His Leu Glu
 1 5 10 15
 Tyr Ala Leu Asn Asn His Lys Ala Lys Ala Ser Val Thr Glu Ser Glu
 20 25 30
 Gly Met Lys Gln Val Ser Trp Thr Leu Lys Asn Leu Pro Ala Leu Ser
 35 40 45
 Arg Glu Pro Gln Val Ser Val Ile Gly Gly Asp Leu Pro Leu Leu Thr
 50 55 60
 Ala Thr Thr Glu Glu Lys Pro Leu Ser Phe Leu Thr Ser Gln Trp Gln
 65 70 75 80
 Pro Glu Gly Asp Ala Gly Ile Arg Ala Leu Ala Gly Lys Leu Thr Ala
 85 90 95
 Gly Ala Lys Asp Asp Lys Glu Lys Val Thr Ala Ile Arg Asp Tyr Val
 100 105 110
 Ile Asp Asn Leu Tyr Tyr Ser Ser Leu Pro Leu Ala Glu Ser Gly Tyr
 115 120 125
 Arg Ile Arg Pro Ala Ala Glu Val Ile Arg Ser Ala Tyr Gly Thr Glu
 130 135 140
 Ala Glu Lys Ala Asn Leu Met Ala Ala Leu Leu Lys Ala Ala Gly Leu
 145 150 155 160
 Lys Ala Gly Ile Gly Ala Val Cys Ala Pro Ser Glu Asn Thr Ala Ser
 165 170 175
 Leu Gly Val Gly Ser Ile Arg Asp Thr Ile Cys Val Asp Gln Arg Arg
 180 185 190
 Arg Gln Pro Thr Gly Ser Val Ser Glu Arg Gln Asn Ser Leu Ser Arg
 195 200 205
 Phe Val Ala Glu Arg Leu Cys Leu Cys Ser Phe Ile Asp Ala Ala Val

220

<213> B.fragilis

[illegible]

<210> 9141
 <211> 348
 <212> PRT
 <213> B.fragilis

<400> 9141

Met Pro Ser Gly Ser Phe Gly Ile Lys Ile Val Thr Gly Asp Thr Pro
 1 5 10 15
 Gly Thr Ala Thr Glu Ile Ala Arg Gln Ile Gly Leu Trp Lys Pro Glu
 20 25 30
 Asp Thr Glu Arg Asn Arg Ile Thr Gly Val Ala Phe Ala Glu Leu Ser
 35 40 45
 Asp Glu Glu Ala Leu Asp Arg Val Met Asp Leu Lys Ile Met Ser Arg
 50 55 60
 Ala Arg Pro Thr Asp Lys Gln Arg Leu Val Gln Leu Leu Gln Gln Lys
 65 70 75 80
 Gly Ala Val Val Ala Val Thr Gly Asp Gly Thr Asn Asp Ala Pro Ala
 85 90 95
 Leu Asn His Ala Gln Val Gly Leu Ser Met Gly Thr Gly Thr Ser Val
 100 105 110
 Ala Lys Glu Ala Ser Asp Ile Thr Leu Leu Asp Asp Ser Phe Asn Ser
 115 120 125
 Ile Gly Thr Ala Val Met Trp Gly Arg Ser Leu Tyr Lys Asn Ile Gln
 130 135 140
 Arg Phe Ile Val Phe Gln Leu Thr Ile Asn Phe Val Ala Leu Leu Ile
 145 150 155 160
 Val Leu Leu Gly Ser Ile Val Gly Thr Glu Leu Pro Leu Thr Val Thr
 165 170 175
 Gln Met Leu Trp Val Asn Leu Ile Met Asp Thr Phe Ala Ala Leu Ala
 180 185 190
 Leu Ala Ser Ile Pro Pro Ser Glu Ser Val Met Asn Asp Lys Pro Arg
 195 200 205
 Arg Ser Thr Asp Phe Ile Ile Ser Lys Ala Met Gln His Asn Ile Phe
 210 215 220
 Gly Val Gly Thr Leu Phe Leu Val Val Leu Met Ala Met Ile Tyr Tyr
 225 230 235 240
 Phe Thr Asn Ala Asp Gly Gly Met Thr Val Gln Arg Leu Thr Ile Phe
 245 250 255
 Phe Thr Phe Phe Val Met Leu Gln Phe Trp Asn Leu Phe Asn Ala Arg
 260 265 270
 Val Phe Gly Thr Thr Asp Ser Ala Phe Lys Gly Leu Thr Lys Ser Tyr
 275 280 285
 Gly Met Glu Leu Ile Val Leu Ala Ile Leu Gly Gly Gln Phe Leu Ile
 290 295 300
 Val Gln Phe Gly Gly Ala Val Phe Arg Thr Glu Pro Leu Asp Trp Gln
 305 310 315 320
 Thr Trp Leu Ile Ile Ile Gly Ser Ser Ser Leu Val Leu Trp Ile Gly
 325 330 335
 Glu Leu Ile Arg Leu Val Lys Arg Leu Thr Gln Lys
 340 345

<210> 9142
 <211> 145
 <212> PRT
 <213> B.fragilis

<400> 9142

Leu Phe Ile Met Ser Ile Asn Glu Leu Gln Asp Glu Val Val Ala Glu
 1 5 10 15

Phe Ser Asp Phe Asp Asp Trp Met Asp Arg Tyr Gln Leu Leu Ile Asp
 20 25 30
 Leu Gly Asn Glu Gln Glu Pro Leu Asp Glu Lys Tyr Lys Thr Glu Gln
 35 40 45
 Asn Leu Ile Glu Gly Cys Gln Ser Arg Val Trp Leu Gln Ala Asp Glu
 50 55 60
 Val Asp Gly Lys Ile Ile Phe Lys Ala Glu Ser Asp Ala Leu Ile Val
 65 70 75 80
 Lys Gly Ile Ile Ala Leu Leu Ile Lys Val Val Ser Gly His Thr Pro
 85 90 95
 Asp Glu Ile Leu Asn Ser Glu Leu Tyr Phe Ile Asp Arg Ile Gly Leu
 100 105 110
 Lys Asp His Leu Ser Pro Thr Arg Ser Asn Gly Leu Leu Ser Met Val
 115 120 125
 Lys Gln Met Arg Met Tyr Ala Leu Ala Phe Lys Ala Lys Glu Ala Lys
 130 135 140
 Gly
 145

<210> 9143

<211> 130

<212> PRT

<213> B.fragilis

<400> 9143

Lys Leu Ile Ile Met Asn Phe Pro Gln Asn Val Lys Tyr Thr Asn Glu
 1 5 10 15
 His Glu Trp Ile Arg Leu Glu Gly Asp Val Ala Tyr Val Gly Ile Thr
 20 25 30
 Asp Tyr Ala Gln Glu Gln Leu Gly Asp Ile Val Phe Val Asp Ile Pro
 35 40 45
 Thr Glu Gly Glu Thr Leu Glu Ala Gly Glu Val Phe Gly Thr Ile Glu
 50 55 60
 Val Val Lys Thr Ile Ser Asp Leu Phe Leu Pro Val Ala Gly Glu Val
 65 70 75 80
 Val Glu Gln Asn Pro Ala Leu Glu Glu Asn Pro Glu Leu Val Asn Lys
 85 90 95
 Asp Pro Tyr Gly Glu Gly Trp Leu Ile Lys Met Lys Pro Ala Asn Ala
 100 105 110
 Ala Asp Leu Asp Asn Leu Leu Asp Ala Glu Gly Tyr Lys Ala Val Val
 115 120 125
 Asn Ala
 130

<210> 9144

<211> 180

<212> PRT

<213> B.fragilis

<400> 9144

Ser Ser His Met Thr Lys Ile Tyr Thr Leu Leu Leu Leu Cys Leu Phe
 1 5 10 15
 Ala Leu Thr Leu Pro Val Thr Ala Arg Glu Ala Glu Phe Lys Lys Ile
 20 25 30
 Lys Glu Ser Trp Thr Leu Gln Ala Asp Gly Thr Gln Val Tyr Arg Gln
 35 40 45
 Ser Lys Val Leu Thr Leu Tyr Thr His Thr Ala Met Asn Arg Thr Tyr
 50 55 60
 Gly Glu Ser Phe Ile Thr Tyr Asp Pro Arg Tyr Gln Thr Leu Gln Ile

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<210> 9145
<211> 235
<212> PRT
<213> B.fragilis
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Lys 1	Ser	Ile	Ile	Lys 5	Glu	Thr	Asn	Lys	Met 10	Ala	Glu	Glu	Glu	Lys 15	Ile	
Glu	Gln	His	Ile	Ile	Ala	Asp	Arg	Thr	Leu	Ile	Arg	Thr	Ala	Arg	Ile	
			20					25					30			
Ile	Ser	Gly	Ile	Leu	Thr	Pro	Phe	Ser	Ile	Pro	Phe	Leu	Ala	Phe	Leu	
		35					40					45				
Val	Leu	Phe	Leu	Phe	Ser	Tyr	Leu	Arg	Ile	Met	Pro	Leu	Gln	Tyr	Lys	
		50				55					60					
Leu	Ile	Val	Leu	Gly	Ile	Val	Tyr	Cys	Phe	Thr	Ile	Leu	Met	Pro	Thr	
65					70					75					80	
Met	Thr	Ile	Phe	Leu	Phe	Arg	Lys	Val	Asn	Gly	Phe	Ala	Arg	Gln	Asp	
				85					90					95		
Leu	Ser	Asp	Arg	Lys	Lys	Arg	Tyr	Val	Pro	Ile	Leu	Leu	Thr	Ile	Ile	
			100					105					110			
Ser	Tyr	Val	Phe	Cys	Leu	Met	Met	Met	His	Lys	Leu	Asn	Ile	Pro	Trp	
		115					120					125				
Tyr	Met	Thr	Gly	Ile	Ile	Leu	Ala	Ser	Leu	Val	Val	Leu	Val	Ile	Cys	
						135					140					
Ile	Ile	Val	Asn	Leu	Lys	Trp	Lys	Leu	Ser	Glu	His	Met	Ala	Gly	Met	
145					150					155					160	
Gly	Gly	Ile	Val	Gly	Gly	Leu	Val	Ser	Phe	Ser	Ala	Leu	Phe	Ser	Tyr	
				165					170					175		
Asn	Pro	Val	Trp	Trp	Leu	Cys	Leu	Phe	Ile	Leu	Val	Ala	Gly	Ile	Leu	
			180					185					190			
Gly	Ser	Ala	Arg	Ile	Ile	Leu	Gln	His	His	Thr	Leu	Gly	Glu	Val	Leu	
		195					200					205				
Ala	Gly	Phe	Thr	Val	Gly	Phe	Val	Cys	Ser	Leu	Leu	Val	Leu	His	Pro	
		210				215					220					
Leu	Ser	Asn	Val	Leu	Phe	Arg	Ile	Phe	Leu	Phe						
225					230					235						

<400> 9146

Asn Ser Ser Phe Thr Leu Tyr Met Ala Leu Thr Gly Glu Val Val Ala
 1 5 10 15
 Cys Leu Lys Gln His Pro Glu Ala Val Val Val Ser Gln Ser Asn His
 20 25 30
 Pro Asn Arg Val Gly Glu His Arg Ala Leu Ala His Gln Leu Thr Val
 35 40 45
 Glu Gly Leu Gln Asn Pro Val Ile Phe Phe Gln His Tyr Ala Glu Asp
 50 55 60
 Thr Ala Glu Asp Leu Gln Val Lys Ala Gly Ala Asp Met Gly Ala Leu
 65 70 75 80
 Ile Phe Asp Gly Leu Cys Asp Gly Ile Tyr Leu Phe Asn Gln Gly Lys
 85 90 95
 Leu Ser His Ala Val Ile Asp Ala Thr Ala Phe Gly Ile Leu Gln Ala
 100 105 110
 Gly Arg Ile Arg Thr Ser Lys Thr Glu Tyr Ile Ser Cys Pro Gly Cys
 115 120 125
 Gly Arg Thr Leu Phe Asn Leu Gln Ser Thr Ile Ala Arg Val Lys Glu
 130 135 140
 Ala Thr Ser His Leu Lys Gly Leu Lys Ile Gly Ile Met Gly Cys Ile
 145 150 155 160
 Val Asn Gly Pro Gly Glu Met Ala Asp Ala Asp Tyr Gly Tyr Val Gly
 165 170 175
 Ala Gly Arg Gly Lys Ile Ser Leu Tyr Lys Gln Lys Glu Cys Ile Glu
 180 185 190
 Lys Asn Ile Pro Glu Glu Glu Ala Val Glu Lys Leu Ile Glu Leu Ile
 195 200 205
 Lys Ala Asn Gly Asp Tyr Glu Lys Thr Ser Ser Leu Ser Ser Pro
 210 215 220
 Lys Glu Lys Glu Asp Lys
 225 230

<210> 9147

<211> 145

<212> PRT

<213> B.fragilis

<400> 9147

Val Asn Leu Ser Pro Val Thr Val Arg Lys Val Tyr Ala Leu Gln Pro
 1 5 10 15
 Asp Ala Ala Asn Ala Lys Asp Gly Tyr Val Val Phe Thr Leu Pro Val
 20 25 30
 Glu Arg Gly Ser Leu Ala Asp Ser Gln Tyr Val Arg Phe Asn Ser Lys
 35 40 45
 Arg Thr Ser Asn Leu Leu Leu Pro Gly Leu Ala Gly Glu Ser Phe Thr
 50 55 60
 Tyr Thr Ile Asp Thr Pro Ala Gly Met Glu Pro Val Thr Arg Pro Met
 65 70 75 80
 Glu Lys Lys Met Asp Asn Ala Val Gly Thr Leu Thr Ile Ser Ile Arg
 85 90 95
 Pro Glu Gly Ala Lys Thr Arg Val Ile Arg Ser Leu Lys Leu Lys Lys
 100 105 110
 Gln Met Ile Arg Pro Ala Asp Tyr Ala Ala Phe Arg Gln Leu Met Thr
 115 120 125
 Glu Tyr Gly Ala Val Asp Gly Leu Thr Leu Val Tyr Arg Lys Pro Leu
 130 135 140
 Pro
 145

<210> 9148

<211> 565
 <212> PRT
 <213> B.fragilis

<400> 9148

Thr	Glu	Tyr	Ser	Phe	Tyr	Asp	Phe	Leu	Lys	Leu	Ile	Gly	Ser	Leu	Gly
1				5					10					15	
Leu	Phe	Leu	Tyr	Gly	Met	Lys	Ile	Met	Ser	Glu	Gly	Leu	Gln	Lys	Val
			20					25					30		
Ala	Gly	Asp	Arg	Leu	Arg	Gly	Ile	Leu	Thr	Ala	Met	Thr	Thr	Asn	Arg
		35					40					45			
Val	Thr	Gly	Val	Leu	Thr	Gly	Val	Leu	Ile	Thr	Ala	Leu	Ile	Gln	Ser
	50					55					60				
Ser	Ser	Ala	Thr	Thr	Val	Met	Val	Val	Ser	Phe	Val	Asn	Ala	Gly	Leu
65					70					75					80
Leu	Thr	Leu	Ala	Glu	Ser	Ile	Ser	Val	Ile	Met	Gly	Ala	Asn	Ile	Gly
				85					90					95	
Thr	Thr	Val	Thr	Ala	Trp	Ile	Ile	Ser	Ile	Phe	Gly	Phe	Lys	Val	Asp
			100					105					110		
Met	Ala	Ala	Phe	Ala	Leu	Pro	Leu	Leu	Ala	Ile	Ala	Leu	Pro	Leu	Ile
		115					120					125			
Phe	Ser	Gly	Lys	Ser	Asn	Arg	Lys	Ser	Ile	Gly	Glu	Phe	Ile	Phe	Gly
	130					135					140				
Phe	Ser	Phe	Leu	Phe	Met	Gly	Leu	Ser	Tyr	Leu	Lys	Ala	Asn	Ala	Pro
145					150					155					160
Asp	Leu	Asn	Ala	Asn	Pro	Glu	Met	Leu	Ala	Phe	Val	Gln	Asn	Tyr	Thr
				165					170					175	
Asp	Met	Gly	Phe	Phe	Ser	Val	Leu	Leu	Phe	Leu	Phe	Ile	Gly	Thr	Ile
			180					185					190		
Leu	Thr	Met	Ile	Val	Gln	Ala	Ser	Ala	Ala	Thr	Met	Ala	Ile	Thr	Leu
		195					200					205			
Ile	Met	Cys	Ala	Asn	Gly	Trp	Ile	Ser	Leu	Glu	Leu	Gly	Ala	Ala	Leu
	210					215					220				
Val	Leu	Gly	Glu	Asn	Ile	Gly	Thr	Thr	Ile	Thr	Ala	Asn	Leu	Ala	Ala
225					230					235					240
Leu	Thr	Ala	Asn	Ser	Gln	Ala	Lys	Arg	Ala	Ala	Leu	Ala	His	Phe	Val
				245					250					255	
Phe	Asn	Val	Phe	Gly	Val	Ile	Trp	Val	Leu	Ile	Ile	Phe	His	Pro	Phe
			260					265					270		
Met	Val	Phe	Val	Asn	Trp	Val	Val	Asp	Thr	Phe	Phe	His	Pro	Gly	Ser
		275					280					285			
Ala	Glu	Val	Ala	Ile	Ser	Tyr	Lys	Leu	Ser	Ala	Phe	His	Ser	Ile	Phe
	290					295					300				
Asn	Ile	Cys	Asn	Val	Cys	Leu	Leu	Ile	Trp	Gly	Val	Lys	Leu	Ile	Glu
305					310					315					320
Arg	Thr	Val	Cys	Ala	Ile	Ile	Arg	Pro	Lys	Glu	Glu	Asp	Glu	Glu	Pro
				325					330					335	
Arg	Leu	Arg	Phe	Ile	Thr	Gly	Gly	Met	Leu	Ser	Thr	Ala	Glu	Leu	Ser
			340					345					350		
Ile	Leu	Gln	Ala	Arg	Lys	Glu	Ile	His	Leu	Phe	Ser	Glu	Arg	Ile	His
		355					360					365			
Arg	Met	Phe	Gly	Met	Val	Gln	Asp	Leu	Leu	His	Thr	Glu	Lys	Asp	Asp
	370					375					380				
Asp	Phe	Asn	Lys	Leu	Phe	Ser	Arg	Ile	Glu	Lys	Tyr	Glu	Asn	Ile	Ser
385					390					395					400
Asp	Asn	Met	Glu	Leu	Glu	Ile	Ala	Asn	Tyr	Leu	Asn	Gln	Val	Ser	Glu
				405					410					415	
Gly	Arg	Leu	Ser	Glu	Ser	Lys	Leu	Gln	Ile	Arg	Ala	Met	Leu	Arg	
			420				425						430		

Glu Val Thr Glu Ile Glu Ser Ile Gly Asp Ser Cys Tyr Asn Leu Ala
 435 440 445
 Arg Thr Ile Ser Arg Lys Arg Gln Thr Asn Gln Asp Phe Thr Glu Lys
 450 455 460
 Gln Tyr Glu His Ile His Phe Met Met Lys Leu Thr Asn Asp Ala Leu
 465 470 475 480
 Ser Gln Met Ile Val Val Val Glu Lys Pro Glu His Gln Ser Ile Asp
 485 490 495
 Val Asn Lys Ser Phe Asn Ile Glu Asn Glu Ile Asn Asn Tyr Arg Asn
 500 505 510
 Gln Leu Lys Asn Gln Asn Ile Leu Asp Val Asn Asn Lys Glu Tyr Asp
 515 520 525
 Tyr Gln Met Gly Val Tyr Tyr Met Asp Ile Ile Ala Glu Cys Glu Lys
 530 535 540
 Leu Gly Asp Tyr Val Val Asn Val Val Glu Ala Ser Ser Asp Val Lys
 545 550 555 560
 Glu Lys Lys Ala Ser
 565

<210> 9149

<211> 551

<212> PRT

<213> B.fragilis

<400> 9149

Met Ile Cys Ser Phe Phe Phe Ile Tyr Phe Cys Pro Leu Arg Ile Leu
 1 5 10 15
 Ile Ile Asn Leu Thr Ile Met Lys Arg Lys Ala Thr Leu Leu Phe Leu
 20 25 30
 Val Thr Phe Val Leu Leu Leu Gly Ala Val Ala Gln Glu Lys Leu Lys
 35 40 45
 Thr Val Ile Glu Pro Leu Gln Asn Glu Arg Trp Trp Gly Gly Phe Val
 50 55 60
 Ala Leu Gly Asn Gln Met Pro Phe Asn Asp His Leu Arg Met Gln Asp
 65 70 75 80
 Met Ser Arg Asn Asn Met Asn Asn Gln Val Val Pro Phe Met Leu Ser
 85 90 95
 Ser Glu Gly Arg Tyr Ile Trp Ala Glu Asn Pro Phe Cys Phe Glu Val
 100 105 110
 Lys Asp Gly Gln Leu Ile Ile Tyr Ser Asp Ser Glu Lys Ile Glu Pro
 115 120 125
 Val Lys Ala Gly Thr Thr Leu Lys Glu Ala Leu Leu Ala Ala Ser Ala
 130 135 140
 Lys His Phe Pro Pro Ser Gly Lys Ile Pro Glu Pro Thr Phe Phe Ser
 145 150 155 160
 Leu Pro Gln Tyr Asn Thr Trp Ile Glu Leu Met Tyr Asp Gln Asn Gln
 165 170 175
 Glu Asp Ile Met Asn Tyr Ala His Lys Ala Val Glu Asn Gly Phe Pro
 180 185 190
 Gln Gly Val Phe Met Val Asp Asp Asn Trp Gln Arg Tyr Tyr Gly Asn
 195 200 205
 Phe Asp Phe Lys Thr Glu Arg Phe Pro Asp Pro Lys Gly Met Thr Asp
 210 215 220
 Glu Leu His Arg Met Gly Phe Lys Val Met Leu Trp Val Ala Pro Tyr
 225 230 235 240
 Val Ser Pro Asp Ser Pro Glu Phe Arg Glu Leu Glu Ala Lys Gly Tyr
 245 250 255
 Leu Leu Lys Asp Lys Asn Gly Arg Thr Ala Ile Ile His Trp Trp Asn
 260 265 270

Gly Tyr Ser Ala Cys Tyr Asp Thr Thr Asn Pro Glu Ala Met Asn Tyr
 275 280 285
 Leu Lys Glu Gln Leu Lys Ala Asn Gln Glu Lys Tyr Gly Ile Asp Gly
 290 295 300
 Phe Lys Phe Asp Gly Gly Asp Val Ala Tyr Met Thr Gly Glu Tyr Thr
 305 310 315 320
 Phe His Asp Lys Asn Ala Asn Val Asn Thr Phe Met Glu Lys Trp Ala
 325 330 335
 Glu Ile Gly Leu Ser Phe Pro Tyr Asn Glu Leu Arg Ala Ser Trp Lys
 340 345 350
 Leu Gly Gly Gln Ala Leu Val Gln Arg Leu Gly Asp Lys Asp Tyr Ser
 355 360 365
 Trp Arg Ala Thr Gln Leu Leu Ile Pro Asp Met Thr Ala Ala Gly Leu
 370 375 380
 Leu Gly His Tyr Tyr Thr Cys Pro Asp Met Val Gly Gly Gly Gln Phe
 385 390 395 400
 Gly Ala Phe Leu Asn Val Lys Lys Phe Asp Glu Glu Leu Ile Val Arg
 405 410 415
 Ser Cys Gln Val His Ala Leu Met Pro Met Met Gln Phe Ser Val Ala
 420 425 430
 Pro Trp Arg Ile Leu Ser Lys Glu Asn Val Ala Ile Cys Ala Lys Tyr
 435 440 445
 Ala His Leu His Gln Gln Met Gly Asp Tyr Ile Leu Glu Leu Ala Lys
 450 455 460
 His Ala Ser Lys Thr Gly Glu Pro Ile Val Arg His Met Glu Tyr Gln
 465 470 475 480
 Tyr Pro His Gln Gly Phe Ile Asp Cys Lys Asp Gln Phe Met Leu Gly
 485 490 495
 Asp Lys Tyr Leu Val Ala Pro Met Leu Thr Ser Gly Thr Ser Arg Thr
 500 505 510
 Val Met Leu Pro Lys Gly Arg Trp Lys Asp Asp Arg Gly Lys Val Phe
 515 520 525
 Lys Gly Pro Arg Thr Met Thr Ile Asp Val Pro Leu Glu Arg Leu Pro
 530 535 540
 Tyr Phe Glu Lys Leu Thr Lys
 545 550

<210> 9150

<211> 108

<212> PRT

<213> B.fragilis

<400> 9150

Phe Val Pro Leu His Arg Phe Lys Arg Lys Ala Leu Leu Asn Arg Ser
 1 5 10 15
 Phe Gly Glu Val Ala Glu Trp Ser Ile Ala Ala Val Leu Lys Thr Val
 20 25 30
 Val Leu Arg Gly Thr Arg Gly Ser Asn Pro Cys Leu Ser Ala Ile Asn
 35 40 45
 Ala Glu Asn Gln Gln Ile Ile Lys Gln Thr Pro Asn Phe Ile Pro Lys
 50 55 60
 Asn Val Lys Leu Gly Val Phe Ile Leu Phe Lys Thr Asn His Ile Arg
 65 70 75 80
 Ser Glu Asn Asn Leu Ile Lys Asn Arg Thr Asn Glu Lys Asn Asn Gln
 85 90 95
 Phe Ile Phe Arg Lys Ile Ser Tyr Leu Cys Ser Lys
 100 105

<210> 9151

<211> 72
 <212> PRT
 <213> B.fragilis

<400> 9151

Ile	Thr	Ile	Ser	Lys	Lys	Asn	Ala	Glu	Ile	Cys	Asp	Ile	His	Glu	Lys
1				5					10					15	
Leu	Ser	Thr	His	Ile	Ala	Arg	His	Ser	Tyr	Ala	Thr	Ser	Ile	Ser	Leu
			20					25					30		
Thr	Asn	Gly	Val	Ser	Met	Glu	Asn	Leu	Ala	Lys	Ile	Leu	Gly	His	Thr
		35					40					45			
Asp	Thr	Ser	Ile	Thr	Arg	Thr	Leu	Cys	Thr	Gly	Ala	Gly	Pro	Lys	Tyr
	50					55					60				
Tyr	Gly	Arg	Tyr	Thr	Glu	Ser	Lys								
65					70										

<210> 9152
 <211> 464
 <212> PRT
 <213> B.fragilis

<400> 9152

Gly	Pro	Ala	Ser	Val	Phe	Leu	Lys	Lys	Phe	Ile	Asn	Asn	Ser	Asp	Ser
1				5					10					15	
Phe	Cys	Val	Ser	Pro	Tyr	Phe	Gly	Val	Ile	Cys	Gly	His	Glu	Thr	Ile
			20					25					30		
Gln	Thr	Tyr	Met	Glu	Phe	Leu	Val	Ile	Ile	Leu	Leu	Leu	Val	Leu	Asn
		35					40					45			
Gly	Ile	Phe	Ala	Met	Tyr	Glu	Ile	Ala	Leu	Val	Ser	Ser	Ser	Lys	Ala
	50					55					60				
Arg	Leu	Glu	Thr	Leu	Val	Ser	Lys	Gly	Asn	Lys	Ser	Ala	Arg	Gly	Val
65					70				75					80	
Leu	Lys	Gln	Leu	Glu	Glu	Pro	Glu	Lys	Phe	Leu	Ser	Thr	Ile	Gln	Ile
			85					90						95	
Gly	Ile	Thr	Leu	Ile	Gly	Ile	Val	Ser	Gly	Ala	Phe	Gly	Gly	Val	Ala
			100					105					110		
Ile	Ala	Asp	Val	Thr	Pro	Leu	Phe	Ala	Met	Ile	Pro	Gly	Ala	Glu	
		115				120					125				
Val	Tyr	Ala	Lys	Asp	Leu	Ala	Met	Ile	Thr	Thr	Val	Ile	Val	Ile	Thr
		130				135					140				
Tyr	Leu	Ser	Leu	Ile	Ile	Gly	Glu	Leu	Val	Pro	Lys	Ser	Ile	Ala	Leu
145					150					155					160
Ser	Asn	Pro	Glu	Arg	Tyr	Ala	Thr	Leu	Leu	Ser	Pro	Val	Met	Ile	Leu
				165					170					175	
Leu	Thr	Lys	Ile	Ser	Phe	Pro	Phe	Val	Trp	Leu	Leu	Ser	Ile	Ser	Thr
			180					185					190		
Arg	Leu	Leu	Asn	Lys	Leu	Ile	Gly	Leu	Lys	Ser	Glu	Glu	Arg	Leu	Met
		195					200					205			
Thr	Gln	Glu	Glu	Leu	Lys	Met	Ile	Leu	His	Gln	Ser	Phe	Asp	Gln	Gly
		210				215					220				
Val	Ile	Asp	Lys	Glu	Lys	Thr	Glu	Met	Leu	Arg	Asp	Val	Phe	Arg	Phe
225					230					235					240
Ser	Asp	Lys	Arg	Ala	Asn	Glu	Leu	Met	Thr	His	Arg	Arg	Asp	Leu	Val
				245					250					255	
Val	Leu	His	Thr	Asp	Ser	Lys	Glu	Lys	Val	Leu	Gln	Ile	Ile	Asp	
			260				265					270			
Asn	Glu	His	Phe	Ser	Lys	Tyr	Leu	Leu	Ile	Asp	Asp	Asp	Thr	Asp	Glu
		275					280					285			
Ile	Ala	Gly	Val	Val	Ser	Val	Lys	Asp	Ile	Ile	Leu	Met	Ile	Gly	Ser

290		295		300
Glu Gln Glu Phe Asn Leu Arg Glu Ile Ala Arg Pro Ala Leu Phe Ile				
305		310		315
Pro Glu Ser Leu Tyr Ala Lys Lys Val Leu Glu Leu Phe Lys Lys Asn				320
	325		330	335
Lys Asn Lys Phe Gly Val Val Val Asn Glu Tyr Gly Ser Thr Glu Gly				
	340		345	350
Ile Ile Thr Leu His Asp Leu Thr Glu Ser Ile Phe Gly Asp Ile Leu				
	355		360	365
Glu Glu Asp Asp Thr Glu Glu Glu Ile Val Arg Arg Gln Asp Gly				
	370		375	380
Ser Leu Leu Val Glu Ala Ser Met Asn Ile Gly Asp Phe Met Glu Glu				
385		390		395
Met Gly Ile Leu Ser Tyr Asp Asp Ile Glu Ser Glu Asp Phe Thr Thr				400
	405		410	415
Leu Gly Gly Leu Ala Met Phe Leu Ile Gly Arg Ile Pro Lys Ala Gly				
	420		425	430
Asp Ile Phe Thr Tyr Lys Asn Leu Gln Phe Glu Val Val Asp Met Asp				
	435		440	445
Arg Gly Arg Val Asp Lys Leu Leu Val Ile Lys Arg Glu Glu Glu Glu				
450		455		460

<210> 9153
 <211> 97
 <212> PRT
 <213> B.fragilis

<400> 9153

Tyr Ser Gln Ser Met Arg Phe Tyr Phe Asn Asp Leu Phe Ser Ala Leu				
1	5	10	15	
Pro His Ile Gln His Asn Ser Leu Ser Arg His Asn Leu Tyr Phe Val				
	20	25	30	
Gln Gln Ile Pro Arg Val Asn Arg Pro Gln Glu Arg Gly Tyr Ser Gln				
	35	40	45	
Gly Lys Lys Ser Tyr Asp Asn Ile His Asn Lys Asn Val Tyr Val Asp				
50	55	60		
Pro Leu Pro His Lys Tyr Ile His Tyr His Lys Pro His Ile Ser Lys				
65	70	75	80	
Thr Leu Tyr His His Leu His Tyr Val Pro Asn Asp Glu Arg Gln Thr				
	85	90	95	

Lys

<210> 9154
 <211> 469
 <212> PRT
 <213> B.fragilis

<400> 9154

Asn Cys Lys Ser Leu Ile Ile Ile Tyr Tyr Leu Lys Arg Arg Val Asn				
1	5	10	15	
Leu Asn Leu Ser Glu Tyr Leu Leu Leu Phe Gln Ile Leu Gly Val Tyr				
	20	25	30	
Leu Gly Val Glu Phe Gln Thr His Pro Ile Met Asn Ile Lys Arg Asn				
	35	40	45	
Ile Ile Phe Ala Leu Glu Ser Arg Lys Lys Asn Gly Val Pro Ile Val				
50	55	60		
Glu Asn Val Pro Ile Arg Met Arg Val Ile Tyr Ala Ser Gln Arg Ile				
65	70	75	80	

Glu Phe Thr Thr Gly Tyr Arg Ile Asp Val Ala Lys Trp Asp Ala Asp
 85 90 95
 Lys Gln Arg Val Lys Asn Gly Cys Thr Asn Lys Leu Lys Gln Ser Ala
 100 105 110
 Ser Glu Ile Asn Ala Asp Leu Leu Lys Tyr Tyr Ala Glu Ile Gln Asn
 115 120 125
 Val Phe Lys Glu Phe Glu Val Gln Glu Thr Ile Pro Thr Thr Gln Gln
 130 135 140
 Leu Lys Asp Ala Phe Asn Leu Arg Met Lys Asp Thr Ser Glu Glu Gln
 145 150 155 160
 Gln Glu Glu Thr Gln Ile Ser Phe Trp Glu Val Phe Asp Glu Phe Val
 165 170 175
 Lys Glu Cys Gly Asn Gln Asn Asn Trp Thr Ala Ser Thr Tyr Glu Lys
 180 185 190
 Phe Ser Ala Val Lys Asn His Leu Lys Glu Phe Lys Glu Asp Val Thr
 195 200 205
 Phe Glu Tyr Phe Asn Glu Phe Gly Leu Asn Glu Tyr Val Asn Phe Leu
 210 215 220
 Arg Asp Lys Lys Asp Met Arg Asn Ser Thr Ile Gly Lys Gln Met Gly
 225 230 235 240
 Phe Leu Lys Trp Phe Leu Arg Trp Ser Phe Lys Lys Gly His His Gln
 245 250 255
 Asn Ile Ala Tyr Asp Thr Phe Lys Pro Lys Leu Lys Thr Thr Ser Lys
 260 265 270
 Lys Val Ile Phe Leu Thr Trp Asp Glu Leu Asn Arg Leu Lys Asp Tyr
 275 280 285
 Arg Ile Pro Lys Asp Lys Gln Tyr Leu Glu Arg Val Arg Asp Val Phe
 290 295 300
 Leu Phe Cys Cys Phe Thr Ser Leu Arg Tyr Ser Asp Val Arg Asn Leu
 305 310 315 320
 Lys Arg Ser Asp Val Lys Pro Asp His Ile Glu Val Thr Thr Val Lys
 325 330 335
 Thr Ala Asp Ser Leu Ile Ile Glu Leu Asn Asp His Ser Lys Thr Ile
 340 345 350
 Leu Glu Lys Tyr Lys Glu Val His Phe Glu Asn His Met Ala Leu Pro
 355 360 365
 Val Ile Ser Asn Gln Lys Met Asn Asp Tyr Leu Lys Glu Leu Gly Glu
 370 375 380
 Leu Ala Glu Ile Asn Glu Pro Val Arg Glu Thr Tyr Tyr Lys Gly Asn
 385 390 395 400
 Glu Arg Ile Asp Glu Val Thr Pro Lys Tyr Ala Leu Leu Thr Thr His
 405 410 415
 Ala Gly Arg Arg Thr Phe Ile Cys Asn Ala Leu Ala Leu Gly Ile Pro
 420 425 430
 Ala Gln Val Val Met Lys Trp Thr Gly His Ser Asp Tyr Lys Ala Met
 435 440 445
 Lys Pro Tyr Ile Asp Ile Ala Asp Asp Ile Lys Ala Asn Ala Met Asn
 450 455 460
 Lys Phe Asn Gln Leu
 465

<210> 9155

<211> 713

<212> PRT

<213> B.fragilis

<400> 9155

Leu Arg Lys Ser Arg Trp Gln Met Gln Arg Leu Phe Leu Leu Arg Leu
 1 5 10 15

Gln Ile Pro Pro Ile Cys Pro Ile Ile Met His Ile Trp Leu Ile Trp
 20 25 30
 Asn Ser Lys Pro Tyr Lys Arg Ile Val Thr Met Lys Gln Ile Leu His
 35 40 45
 Ile Leu Leu Ile Ala Leu Met Leu Met Gly Phe Tyr Ser Cys Val Pro
 50 55 60
 Lys Thr Glu Leu Ala Ser Pro Asp Gly His Ile Lys Val Ala Phe Thr
 65 70 75 80
 Ala Asp Thr Asp Gly Lys Met Met Tyr Arg Val Thr Val Asn Asp Thr
 85 90 95
 Leu Leu Leu Asp Asn Ser Pro Leu Gly Phe Glu Ala Lys Glu Gly Ile
 100 105 110
 Asp Leu Asn Arg Gly Phe Arg Val Val Asn Thr Val Phe Thr Asp Lys
 115 120 125
 Asp Glu Ile Trp Thr Gln Pro Trp Gly Glu Asn Lys Thr Asn Arg Asn
 130 135 140
 His Tyr Asn Glu Met Ala Val Leu Leu Lys Asn Ala Ala Asn Val Glu
 145 150 155 160
 Leu Thr Leu Arg Phe Arg Ala Phe Asp Asp Gly Val Ala Phe Arg Tyr
 165 170 175
 Glu Tyr Glu Val Pro Gly Val Asp Ser Leu Leu Ile Thr Asp Glu Leu
 180 185 190
 Thr Ala Phe His Phe His Glu Asp Gly Thr Ser Trp Ser Ile Pro Ala
 195 200 205
 Ser Phe Glu Thr Tyr Glu Leu Tyr Ser Lys Gln Lys Ile Ser Glu
 210 215 220
 Val Glu Asn Ala Asn Thr Pro Phe Thr Phe Lys Thr Ser Gly Gly Val
 225 230 235 240
 Tyr Gly Ser Ile His Glu Ala Ala Leu Tyr Asp Phe Pro Glu Met Thr
 245 250 255
 Leu Lys Lys Asp Gly Glu Asn Thr Leu Lys Ser Glu Leu Ala Ser Trp
 260 265 270
 Pro Asp Gly Ile Lys Ala Arg Lys Glu Asn Arg Phe Thr Thr Ala Trp
 275 280 285
 Arg Thr Ile Gln Ile Ala Pro Gln Ala Val Gly Leu Ile Asn Ser Ser
 290 295 300
 Leu Ile Leu Asn Leu Asn Glu Pro Cys Lys Leu Asp Thr Thr Asp Trp
 305 310 315 320
 Ile Lys Pro Met Lys Tyr Val Gly Val Trp Trp Gly Met His Leu Gly
 325 330 335
 Val Glu Thr Trp Lys Met Asp Asp Arg His Gly Ala Thr Thr Ala Asn
 340 345 350
 Ala Lys Lys Tyr Ile Asp Phe Ala His Ala Asn Asn Ile Glu Gly Val
 355 360 365
 Leu Phe Glu Gly Trp Asn Glu Gly Trp Glu Ser Trp Gly Gly Met Gln
 370 375 380
 Ser Phe Asp Phe Thr Lys Pro Tyr Ala Asp Phe Asp Met Asp Glu Ile
 385 390 395 400
 Thr Arg Tyr Ala Arg Glu Lys Asn Val Gln Ile Ile Gly His His Glu
 405 410 415
 Thr Gly Gly Asn Ile Pro Asn Tyr Glu Arg Gln Met Glu Lys Ala Ile
 420 425 430
 Lys Trp Tyr Thr Asp Lys Gly Ile His Ile Leu Lys Thr Gly Tyr Ala
 435 440 445
 Gly Ala Phe Pro Asp Gly His Ser His His Gly Gln Tyr Gly Val Asn
 450 455 460
 His Tyr Gln Lys Val Val Glu Thr Ala Ala Arg Tyr Arg Met Thr Leu
 465 470 475 480
 Asp Ala His Glu Pro Ile Lys Asp Thr Gly Ile Arg Arg Thr Trp Pro

				485					490					495	
Asn	Met	Met	Thr	Arg	Glu	Gly	Ala	Arg	Gly	Met	Glu	Trp	Asn	Ala	Trp
			500						505				510		
Ser	Glu	Gly	Asn	Pro	Pro	Ser	His	His	Glu	Met	Leu	Pro	Phe	Thr	Arg
		515							520				525		
Leu	Leu	Gly	Gly	Pro	Met	Asp	Tyr	Thr	Pro	Gly	Thr	Phe	Asp	Ile	Leu
	530					535					540				
Phe	Thr	Gln	Thr	Lys	Asp	Ser	Pro	Lys	Arg	Gln	Lys	Trp	Asn	Asp	Gln
545					550					555					560
Asp	Lys	Gly	Asn	Ser	Arg	Val	Asn	Thr	Thr	Leu	Ala	Lys	Gln	Leu	Ala
			565						570						575
Asn	Trp	Val	Ile	Leu	Tyr	Ser	Pro	Leu	Gln	Met	Ala	Ser	Asp	Met	Ile
		580							585					590	
Glu	His	Tyr	Glu	Gly	His	Pro	Ala	Phe	Gln	Phe	Phe	Arg	Asp	Phe	Asp
		595					600					605			
Pro	Asp	Cys	Asp	Glu	Ser	Arg	Ala	Leu	Ala	Gly	Glu	Pro	Gly	Glu	Phe
	610					615					620				
Val	Ala	Val	Val	Arg	Lys	Ala	Lys	Gln	Asn	Tyr	Phe	Leu	Gly	Ala	Ser
625					630					635					640
Thr	Asn	Glu	Glu	Pro	Arg	Val	Leu	Pro	Val	Ser	Leu	Asp	Phe	Leu	Glu
				645					650						655
Lys	Gly	Lys	Ile	Tyr	Lys	Ala	Ile	Ile	Tyr	Ala	Asp	Gly	Glu	Lys	Ala
			660						665						670
Asp	Trp	Lys	Thr	Asn	Pro	Thr	Glu	Tyr	Gln	Ile	Thr	Glu	Gln	Glu	Val
		675					680					685			
Thr	Ala	Asp	Asp	Thr	Leu	Asn	Ile	Arg	Met	Ala	Ala	Gly	Gly	Gly	Gln
	690					695					700				
Ala	Ile	Ser	Phe	Met	Pro	Leu	Gln	Lys							
705						710									

<210> 9156

<211> 620

<212> PRT

<213> B.fragilis

<400> 9156

Leu	Lys	Met	Ser	Ile	Met	Asp	Asn	Lys	Gly	Phe	Tyr	Ile	Lys	Ala	Ile
1				5					10					15	
Leu	Ala	Thr	Gly	Thr	Lys	Val	Gln	Asp	Ser	Arg	Val	Asp	Phe	Asn	Lys
			20					25					30		
Gly	Cys	Asn	Leu	Ile	His	Gly	Gln	Ser	Asp	Thr	Gly	Lys	Ser	Val	Val
		35					40					45			
Phe	Ser	Ile	Ile	Gln	Tyr	Leu	Leu	Gly	Gln	Glu	Asp	Pro	Pro	Lys	Glu
	50					55				60					
Ala	Thr	Glu	Gly	Lys	Glu	Tyr	Asp	Thr	Phe	Tyr	Met	Gln	Ile	Cys	Met
65					70					75					80
Tyr	Phe	Asn	Asp	Glu	Asp	Val	Tyr	Thr	Ile	Gln	Arg	Lys	Leu	Thr	Asp
			85					90						95	
Lys	Thr	Lys	Val	Tyr	Val	Lys	His	Cys	Ser	Ile	Asp	Gln	Ile	His	Asp
			100					105						110	
Met	His	Ile	Lys	Gln	Glu	Ile	Tyr	Ser	Val	Lys	Ser	Ser	Glu	Lys	Pro
		115					120						125		
Ser	Ser	Tyr	Ser	Ser	Phe	Leu	Lys	Leu	Cys	Gly	Phe	Asp	Asn	Thr	
		130				135				140					
Ile	Lys	Ile	Lys	Gln	Lys	Asp	Ser	Lys	Phe	Ser	Asn	Leu	Tyr	Tyr	Thr
145					150					155					160
Gln	Leu	Arg	His	Leu	Leu	Met	Leu	Gly	Glu	Gln	Arg	Ile	Val	Asp	Asp
				165					170					175	
Arg	Ser	Ile	Phe	Leu	Pro	Ser	Gly	Ile	Pro	Ser	Asp	Val	Thr	Lys	Glu

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      180      185      190
Lys Ser Val Ile Ser Tyr Leu Tyr Ser Gly Glu Gly Asp Pro Glu Ile
      195      200      205
Asp Gly Leu Glu Asp Lys Lys Leu Arg Lys Ala Arg Ile Thr Gly Lys
      210      215      220
Ile Glu Tyr Val Gln Glu Glu Ile Lys Arg Leu Asp Gln Thr Ile Glu
      225      230      235      240
Asp Ile Gly Asp Val Ser Phe Ala Gly Leu Glu Glu Ala Leu Asn Val
      245      250      255
Asn Lys Ile Lys Ser Glu Ile Lys Asn Ala Ala Gln Arg Leu Asp Ile
      260      265      270
Leu Tyr Lys Gln Lys His Thr Lys Asn Glu Glu Leu Asp Lys Trp Gln
      275      280      285
Ser Lys Ile Leu Phe Glu Gln Glu Leu Tyr Asn Arg Leu Leu Leu Leu
      290      295      300
Lys Ser His Tyr Glu Leu Asp Ile Glu Arg Tyr Lys Gly Ile Glu Glu
      305      310      315      320
Ala Arg Glu Leu Leu Ser Ile Leu Thr Tyr Arg Glu Cys Pro Lys Cys
      325      330      335
His Thr Lys Leu Gln Thr Asp Ser Phe Asp Leu Glu Asp Glu Gln Phe
      340      345      350
Ile Ala Ala Ile Glu Gln Glu Ser Phe Ser Asp Gln Cys Lys Leu Arg
      355      360      365
Ser Leu Asn Glu Tyr Ile Lys Glu Lys Lys Ala Tyr Leu Lys Lys Cys
      370      375      380
Lys Glu Lys Ile Asp Lys Leu Glu Ile Glu Asn Ile Ser Ile Asn Asn
      385      390      395      400
Gln Ile Ser Glu Thr Glu Pro Arg Leu Thr Ser Phe Arg Asp Leu Leu
      405      410      415
Lys Arg Ile Glu Leu Asn Trp Glu Lys Lys Thr Arg Leu Lys His Leu
      420      425      430
Glu Glu Asp Ser Phe Arg Leu Thr Lys Glu Leu Ser Glu Leu Lys Lys
      435      440      445
Ser Leu Thr Asn Lys Gln Val Leu Thr Ile Pro Ser Arg Asn Lys Leu
      450      455      460
Pro Ala Lys Glu Phe Tyr Asp Thr Val Lys Glu Lys Met Val Ala Trp
      465      470      475      480
Asn Leu Glu Asn His Glu Thr Ile Val Met Asn Leu Asp Asp Phe Asp
      485      490      495
Phe Thr Leu Gly Glu Lys Arg Arg Ile Thr Cys Gly Lys Gly Tyr Arg
      500      505      510
Gly Ile Thr Ala Thr Ala Ile Met Met Ser Leu Val Glu Asp Cys Ile
      515      520      525
Tyr Arg Asn Val Pro Phe Thr Arg Leu Leu Val Thr Asp Ser Pro Ile
      530      535      540
Thr Ala His Phe Gly Lys Glu Asp Lys Lys Thr Asp Ala Asp Asp Leu
      545      550      555      560
Glu Glu Asn Val Gln Arg Ser Phe Phe Gln Tyr Met Glu Asp Lys Asn
      565      570      575
Trp Asn Tyr Gln Leu Ile Met Met Asp Asn Lys His Pro Tyr Thr Asp
      580      585      590
Gln Lys Lys Ile Met Lys Asn Ile His Phe Ile Glu Phe Ser Glu Thr
      595      600      605
Gly Arg Lys Gly Phe Tyr Val Gly Lys Arg Lys Glu
      610      615      620

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<210> 9157

<211> 74

<212> PRT

<213> B.fragilis

<400> 9157

His Pro Ser Ser Ile Arg Leu Leu Met Leu Gly Met Ser Ala Leu Gly
 1 5 10 15
 Thr Leu Tyr Ala Pro Gln Pro Ser Asn Ala Ile Asn Thr Thr Cys Phe
 20 25 30
 Ala Cys Arg Leu Ala Ala Gln Ala Thr Leu Gln Asn Pro Ile Ala Ser
 35 40 45
 Lys His Thr Lys Thr Asn Asn Phe Phe Met Val Phe Tyr Leu Tyr Leu
 50 55 60
 Ser Phe Val Phe Cys Val Ser Ser Ile Leu
 65 70

<210> 9158

<211> 169

<212> PRT

<213> B.fragilis

<400> 9158

Gln Leu Thr Phe Tyr Ile Asn Leu Lys His Leu Thr Met Lys Lys Val
 1 5 10 15
 Ile Met Leu Ala Val Val Ala Ala Leu Val Ser Cys Gln Ser Lys
 20 25 30
 Gly Thr Lys Ala Glu Glu Ala Val Ala Asp Ser Leu Ala Val Ala Met
 35 40 45
 Glu Pro Thr Met Glu Glu Thr Gln Val Tyr Glu Gly Val Leu Pro Ala
 50 55 60
 Ala Asp Gly Pro Gly Ile Arg Tyr Val Leu Thr Leu Asn Thr Leu Ala
 65 70 75 80
 Asn Ala Thr Asp Thr Thr Tyr Thr Leu Asp Val Thr Tyr Leu Asp Ala
 85 90 95
 Glu Gly Lys Gly Lys Asp Lys Thr Phe Thr Ser Lys Gly Lys Pro Val
 100 105 110
 Lys Val Glu Lys Thr Val Lys Asp Lys Lys Lys Thr Ala Ile Lys Leu
 115 120 125
 Asn Pro Ser Asp Gly Ser Glu Pro Val Tyr Phe Val Ile Ala Asn Asp
 130 135 140
 Thr Thr Leu Thr Leu Ala Asp Asp Ser Leu Glu Val Ser Glu Ser Asp
 145 150 155 160
 Leu Asn Tyr Asn Ile Ile Arg Val Lys
 165

<210> 9159

<211> 391

<212> PRT

<213> B.fragilis

<400> 9159

Gln Leu Met Phe Asn Gln Thr Asn Leu Lys Phe Arg Glu Met Lys Lys
 1 5 10 15
 Ser Ile Phe Met Phe Ala Leu Ala Thr Leu Met Ser Ala Ser Val Phe
 20 25 30
 Ala Gln Asp Asn Asp Ala Lys Arg Leu Pro Gly Tyr Lys Thr Thr Phe
 35 40 45
 Glu Gly Asn Gly Phe Trp Asn Asn Trp Phe Met Ser Ala Asn Phe Gly
 50 55 60
 Ala Gln Ser Leu Phe Ala Glu Asn Ser Lys Asp Ala Lys Phe Arg Asn
 65 70 75 80

Thr Ile Thr Phe Met Pro Thr Leu Ser Val Gly Lys Trp Phe Asn Pro
 85 90 95
 Tyr Trp Gly Val Arg Leu Gln Gly Thr Gly Gly Ser Leu His Gly Phe
 100 105 110
 Thr Ser Gly Ala Asn Ser Met Leu His Tyr Gln Tyr Gly Ala Val His
 115 120 125
 Ala Asp Phe Met Phe Gly Leu Ile Asn Phe Phe Ala Pro Tyr Lys Glu
 130 135 140
 Asn Arg Arg Phe Asp Ile Val Pro Phe Ala Gly Ile Gly Gly Ala Phe
 145 150 155 160
 Ile Arg Lys Gly Asp Gln Ser Phe Thr Ile Asn Ala Gly Ile Gln Ala
 165 170 175
 Arg Tyr Arg Ile Ser Lys Arg Phe Asp Ile Asn Val Glu Tyr Gln Gly
 180 185 190
 Ala Ile Leu Asp Asp Asp Met Val Val Arg Gly Gly Phe Pro Asn Asp
 195 200 205
 Gly Ile Ser Gly Leu Thr Ala Gly Val Thr Phe Arg Phe Gly Lys Thr
 210 215 220
 Gly Phe Lys Lys Gly Tyr Ser Ser Arg Gln Tyr Asn Ala Ile Lys Ser
 225 230 235 240
 Asn Tyr Ser Asp Leu Glu Ala Asn Tyr Ala Thr Leu Lys Lys Glu Asn
 245 250 255
 Ala Ala Gln Gln Ala Glu Ile Ala Glu Leu Lys Ala Arg Lys Pro Glu
 260 265 270
 Ile Val Lys Glu Glu Thr Ile Ile Asp Asn Ser Glu Ile Lys Ala Leu
 275 280 285
 Pro Ser Thr Ile Thr Phe Pro Phe Asn Ser Ser Lys Ile Glu Leu Ser
 290 295 300
 Gln Glu Val Ser Ile Phe Asn Ile Ala Glu Phe Leu Lys Ala Asn Pro
 305 310 315 320
 Glu Ile Arg Val Arg Leu Thr Gly Tyr Ala Asp Lys Arg Gly Ser Glu
 325 330 335
 Gln Ala Asn Arg Ile Val Ser Glu Arg Arg Ala Asn Ala Val Thr Glu
 340 345 350
 Val Phe Val Asn Lys Tyr Gly Ile Ala Lys Asp Arg Ile Thr Thr Glu
 355 360 365
 Phe Lys Gly Thr Ser Thr Lys Phe Glu Asn Asp Asp Trp Asn Arg Ala
 370 375 380
 Val Val Val Glu Leu Ile Lys
 385 390

<210> 9160

<211> 167

<212> PRT

<213> B.fragilis

<400> 9160

Thr Pro Asp Pro Ser Ser Asp Ala Arg Ala Val Pro Ile Tyr Gln Thr
 1 5 10 15
 Thr Ser Tyr Val Phe Arg Asp Ser Ala His Ala Ala Arg Phe Gly
 20 25 30
 Leu Gln Asp Pro Gly Asn Ile Tyr Gly Arg Leu Thr Asn Ser Thr Gln
 35 40 45
 Gly Val Leu Glu Glu Arg Ile Ala Ala Leu Glu Gly Gly Val Gly Gly
 50 55 60
 Leu Ala Val Ala Ser Gly Ala Ala Ala Val Thr Tyr Ala Ile Glu Asn
 65 70 75 80
 Ile Thr Arg Ser Gly Asp His Ile Val Ala Ala Lys Thr Ile Tyr Gly
 85 90 95

Gly Thr Tyr Asn Leu Leu Ala His Thr Leu Pro Ala Tyr Gly Val Thr
 100 105 110
 Thr Thr Phe Val Asp Pro Ser Asp Leu Phe Asn Phe Glu Arg Ala Ile
 115 120 125
 Arg Glu Asn Thr Lys Ala Ile Phe Ile Glu Thr Leu Gly Asn Pro Asn
 130 135 140
 Ser Asn Ile Ile Asp Met Asp Ala Val Ala Ile Ala His Lys Tyr
 145 150 155 160
 Arg Ile Pro Ala Asp Cys Gly
 165

<210> 9161
 <211> 60
 <212> PRT
 <213> B.fragilis

<400> 9161
 Ser Tyr Leu Pro Leu Leu Phe Ser Trp Ile Met Arg Leu Leu Leu Ser
 1 5 10 15
 Ile Cys His Ser Glu Arg Ile Gly Arg Asn Arg Ala Gly Tyr Tyr Asp
 20 25 30
 Val Ala Met Gly Lys Gln Lys Asn Pro Tyr Thr Gly Thr Tyr Phe Lys
 35 40 45
 Asp Ser Ser Leu Tyr Tyr Arg Gln Glu Gln Ser Ala
 50 55 60

<210> 9162
 <211> 68
 <212> PRT
 <213> B.fragilis

<400> 9162
 Tyr Asn Ser Pro Gly Lys Thr Thr Asn Leu Tyr His Pro Phe Phe Ile
 1 5 10 15
 Lys Leu Tyr Gln Tyr Asn Thr Arg Lys Glu Ala Pro Lys Thr Phe Ile
 20 25 30
 Pro Asp Ala Ser Arg Pro Leu Ile Tyr Asn Leu Asn Thr Ser Ile Ala
 35 40 45
 Ser His Ile Asn Leu Ser Gln Gln Thr Arg Tyr Asn Tyr Pro Glu Ser
 50 55 60
 Asp Ser Leu Phe
 65

<210> 9163
 <211> 332
 <212> PRT
 <213> B.fragilis

<400> 9163
 Ile Ile Lys Pro Met Lys Arg Ile Tyr Leu Leu Leu Ala Ile Leu Leu
 1 5 10 15
 Gly Ser Leu Gln Leu Ala Asn Ala Gln Gln Gln Thr Leu Gln Phe Asn
 20 25 30
 Lys Asp Gly Lys Phe Lys Ile Val Gln Phe Thr Asp Val His Tyr Ile
 35 40 45
 Tyr Asn Asp Pro Arg Ser Asp Val Ser Ile Glu Arg Ile Asn Gln Val
 50 55 60
 Leu Asp Met Glu Lys Pro Asp Leu Val Leu Phe Thr Gly Asp Val Ile
 65 70 75 80

Tyr Gly Lys Pro Ala Glu Glu Gly Met Arg Thr Val Leu Asn Leu Val
 85 90 95
 Ser Lys Arg Lys Ile Pro Phe Ala Val Thr Phe Gly Asn His Asp Asn
 100 105 110
 Glu Gln Gly Leu Ser Arg Glu Glu Leu Leu Lys Ile Ile Gln Ser Val
 115 120 125
 Pro Phe Asn Leu Thr Gln Thr Thr Pro Gly Ile Ser Gly Val Thr Asn
 130 135 140
 Phe Ile Leu Pro Val Lys Ala Ser Asp Gly Lys Arg Asn Ala Thr Val
 145 150 155 160
 Leu Tyr Cys Ile Asp Ser His Ser Tyr Ser Gln Ile Lys Gly Val Asn
 165 170 175
 Gly Tyr Asp Tyr Ile Lys Phe Asp Gln Ile Gln Trp Tyr Arg Glu Asn
 180 185 190
 Ser Lys Lys Phe Thr Glu Glu Asn Asn Gly Val Pro Val Ser Ser Tyr
 195 200 205
 Ala Phe Phe His Ile Ala Leu Pro Glu Tyr Asn Gln Ala Ala Ser Ser
 210 215 220
 Glu Ser Ala Ile Leu Tyr Gly Ile Arg Lys Glu Lys Ala Cys Ala Pro
 225 230 235 240
 Gln Leu Asn Ser Gly Leu Phe Ala Ala Met Lys Glu Met Gly Asp Val
 245 250 255
 Arg Gly Val Phe Val Gly His Asp His Asp Asp Tyr Ala Val Ser
 260 265 270
 Trp Lys Gly Ile Leu Leu Ala Tyr Gly Arg Tyr Thr Gly Gly Asn Thr
 275 280 285
 Val Tyr Asn His Leu Thr Asn Gly Ala Arg Val Ile Glu Leu Asp Glu
 290 295 300
 Asn Ala Asn Ser Phe Arg Thr Trp Ile Arg Leu Lys Glu Gly Val Val
 305 310 315 320
 Gln Gln Val Thr Tyr Pro Ala Asp Phe Ile Lys Glu
 325 330

<210> 9164

<211> 257

<212> PRT

<213> B.fragilis

<400> 9164

Leu Pro Leu Pro Ile Asn Ile Gly Phe Pro Leu Ile Val Asp Asn Thr
 1 5 10 15
 Phe Gly Thr Pro Tyr Leu Ile Arg Pro Ile Glu His Gly Ala Asp Ile
 20 25 30
 Val Val His Ser Ala Thr Lys Phe Ile Gly Gly His Gly Ser Ser Leu
 35 40 45
 Gly Gly Val Ile Val Asp Ser Gly Lys Phe Asp Trp Val Ala Ser Gly
 50 55 60
 Lys Phe Pro Gln Leu Thr Glu Pro Asp Ala Ser Tyr His Gly Val Arg
 65 70 75 80
 Phe Val Asp Ala Ala Gly Ala Ala Ala Tyr Ile Val Arg Ile Arg Ala
 85 90 95
 Val Leu Leu Arg Asp Thr Gly Ala Ala Ile Ser Pro Phe Asn Ala Phe
 100 105 110
 Ile Leu Leu Gln Gly Leu Glu Thr Leu Ser Leu Arg Val Glu Arg His
 115 120 125
 Val Ala Asn Ala Leu Lys Val Ile Asp Phe Leu Val Asn His Pro Lys
 130 135 140
 Val Ala Ala Val Asn His Pro Ser Leu Pro Gly His Pro Asp His Ala
 145 150 155 160

Ile	Tyr	Gln	Arg	Tyr 165	Phe	Pro	Gly	Gly	Ala	Gly	Ser	Ile	Phe	Thr	Phe
Glu	Val	Lys	Gly	Gly	Thr	Glu	Glu	Ala	Gln	Lys	Phe	Ile	Asp	Ser	Leu
Gln	Ile	Phe	Ser	Leu	Leu	Ala	Asn	Val	Ala	Asp	Val	Lys	Ser	Leu	Val
Ile	His	Pro	Ala	Thr	Thr	Thr	His	Ser	Gln	Leu	Asn	Ala	Gln	Glu	Leu
Glu	Glu	Gln	Gly	Ile	Lys	Pro	Gly	Thr	Val	Arg	Leu	Ser	Ile	Gly	Thr
225					230					235					240
Glu	His	Ile	Glu	Asp	Ile	Ile	Asp	Asp	Leu	Arg	Gln	Ala	Leu	Glu	Lys
Ile				245					250					255	

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<210> 9165
<211> 64
<212> PRT
<213> B.fragilis
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<400> 9165
Arg Gln Tyr Thr Glu Lys Gln Thr Asn Gly Lys Val Ile Pro Gln Thr
1          5          10          15
Asn Cys Pro Asp Phe Ile His Lys His Ile Ile Phe Tyr Phe Thr Lys
          20          25          30
Leu Cys Ile Phe Thr Lys Ser Asp Asn Leu Lys Ile Asn Glu Glu Ile
          35          40          45
Phe Ala Thr Asn Lys Asn Tyr Leu Tyr Phe Cys Asp Arg Phe Ala Asn
          50          55          60

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<210> 9166
<211> 60
<212> PRT
<213> B.fragilis
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<400> 9166
Gly Pro Phe Thr Gln Asn Ser Pro Met Cys Asp Thr Ser Lys Thr Pro
1      5      10      15
Thr Leu Leu Gln Thr Val Arg Cys Ser Ser Met Ile Pro Glu Tyr Ser
      20      25      30
Ile Gly Met Leu Tyr Pro Ala Asn Ser Cys Ile Leu Ala Pro Ser Ala
      35      40      45
Ile Cys Phe Ser Val Asn Gly Val Val Phe Met Lys
      50      55      60

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<210> 9167
<211> 445
<212> PRT
<213> B.fragilis
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<400> 9167
Asn Phe Pro Thr Lys Ile Ala Asp Lys Asn Glu Arg Arg Asn His Phe
1          5          10          15
Tyr Ile Thr Leu His Arg Ile His Lys Val Tyr Arg Thr Gly Pro Met
          20          25          30
Lys Lys Asn Val Leu Phe Leu Leu Leu Leu Gly Leu Leu Thr Thr Val
          35          40          45
Ser Ala Gln Pro Thr His Arg Ile Lys Gly Thr Val Ile Asp Lys Ala
          50          55          60

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Ser Arg Gln Pro Leu Glu Phe Ile Asn Val Leu Val Leu Gly Leu Gly
 65 70 75 80
 Arg Gly Gly Val Thr Asp Ala Glu Gly His Phe Asn Ile Gly Glu Val
 85 90 95
 Pro Pro Gly Ile Tyr Arg Leu Gln Ala Ser Ala Val Gly Tyr Lys Thr
 100 105 110
 Ile Leu Thr Pro Glu Tyr Ile Val Ser Thr Lys Asp Leu Thr Ile Gln
 115 120 125
 Ile Glu Thr Glu Glu Asn Leu Thr Glu Leu Glu Gly Val Thr Val Thr
 130 135 140
 Ala Ser Pro Phe Arg Arg Asp Pro Glu Ser Pro Val Gly Leu Arg Ile
 145 150 155 160
 Ile Gly Leu Gln Glu Ile Glu Lys Ser Pro Gly Ala Asn Arg Asp Ile
 165 170 175
 Ser Arg Ile Val Gln Ser Tyr Pro Gly Val Ala Phe Ser Pro Ala Gly
 180 185 190
 Tyr Arg Asn Asp Leu Ile Val Arg Gly Gly Ser Pro Ser Glu Asn Arg
 195 200 205
 Phe Tyr Leu Asp Gly Val Glu Ile Pro Asn Ile Asn His Phe Ser Thr
 210 215 220
 Gln Gly Ala Ser Gly Gly Pro Val Gly Ile Ile Asn Ala Asp Leu Ile
 225 230 235 240
 Arg Glu Val Asn Phe Tyr Thr Gly Ala Phe Pro Thr Asp Arg Gly Asn
 245 250 255
 Ala Met Ser Ser Val Leu Asp Phe Lys Leu Arg Asp Gly Asp Met Glu
 260 265 270
 Arg Asn Ser Leu Lys Ala Thr Leu Gly Ala Ser Glu Val Ser Leu Ala
 275 280 285
 Ser Asn Gly His Ile Gly Lys Lys Thr Ser Tyr Leu Val Ser Val Arg
 290 295 300
 Gln Ser Tyr Leu Gln Phe Leu Phe Asp Met Leu Gly Leu Pro Phe Leu
 305 310 315 320
 Pro Thr Phe Thr Asp Ala Gln Phe Lys Leu Lys Thr Arg Phe Asn Ala
 325 330 335
 Asn Asn Glu Leu Thr Ile Leu Gly Leu Gly Gly Ile Asp Asn Met Lys
 340 345 350
 Leu Asn Thr Lys Leu Asp Gly Glu Lys Ala Glu Tyr Ile Leu Ser Tyr
 355 360 365
 Leu Pro Lys Ile Gln Gln Glu Thr Phe Thr Leu Gly Ala Val Tyr Arg
 370 375 380
 His Tyr Ala Gly Ile His Val Gln Ser Val Val Val Ser His Ser Tyr
 385 390 395 400
 Leu Asn Asn Arg Asn Thr Lys Tyr Leu Asn Asn Asp Glu Ser Ser Ala
 405 410 415
 Asp Asn Leu Ser Leu Lys Leu Arg Ser Val Glu Gln Glu Thr Lys Phe
 420 425 430
 Arg Ile Glu Asn Thr Ser Thr Phe Gly Lys Leu Glu Asn
 435 440 445

<210> 9168
 <211> 234
 <212> PRT
 <213> B.fragilis

<400> 9168
 Lys Thr Leu Thr Arg Tyr Trp His Ile Ile Lys Lys Cys Asp Ile Cys
 1 5 10 15
 Gly Met Ile Gln Ile Glu Thr Ile Leu Asp Ile Leu Val Lys Gly Phe
 20 25 30

Val Ile Gly Ile Val Val Ser Ala Pro Leu Gly Pro Val Gly Val Leu
 35 40 45
 Cys Ile Gln Arg Thr Leu Asn Lys Gly Arg Trp Tyr Gly Phe Val Thr
 50 55 60
 Gly Leu Gly Ala Ser Leu Ser Asp Ile Ala Tyr Ala Leu Leu Thr Gly
 65 70 75 80
 Tyr Gly Met Ser Phe Val Phe Asp Tyr Ile Asn Lys Asn Ile Phe Tyr
 85 90 95
 Leu Gln Leu Leu Gly Ser Ile Met Leu Leu Ala Phe Gly Ile Tyr Thr
 100 105 110
 Phe Arg Ser Asn Pro Val Gln Ser Ile Arg Pro Val Ser Ala Asn Lys
 115 120 125
 Gly Ser Tyr Phe His Asn Phe Ile Thr Ala Phe Ala Val Thr Leu Ser
 130 135 140
 Asn Pro Leu Ile Ile Phe Leu Phe Ile Gly Leu Phe Ala Arg Phe Ala
 145 150 155 160
 Phe Val Gln Pro Gly Val Leu Val Phe Glu Glu Ile Thr Gly Tyr Leu
 165 170 175
 Ala Ile Ala Leu Gly Ala Leu Ala Trp Trp Phe Gly Ile Thr Phe Phe
 180 185 190
 Val Asn Lys Val Arg Thr Arg Phe Asn Leu Arg Gly Ile Trp Ile Leu
 195 200 205
 Asn Arg Val Ile Gly Ser Ile Val Met Ala Val Ser Val Phe Gly Leu
 210 215 220
 Ile Phe Thr Leu Leu Gly Glu Ser Ile Tyr
 225 230

<210> 9169
 <211> 103
 <212> PRT
 <213> B.fragilis

<400> 9169
 Lys Lys Gly Thr Ile Ser Leu Gln Lys Gln Pro Pro Leu Arg Asp Leu
 1 5 10 15
 Gly Tyr Lys Ile Phe Leu Leu Ser Ile Arg Leu Arg Ser Gln Tyr Tyr
 20 25 30
 Ile Val Ile Leu Thr Phe Ile Ile Glu Thr Phe Gly Lys Ser Glu Tyr
 35 40 45
 Arg Lys Asn Leu Ser Tyr Ile Ile Val Arg Thr Lys Ser Thr Gly Lys
 50 55 60
 Thr Val Leu Leu Gln Leu Cys Ile Arg Asn Asn Glu Met Asn Ile Lys
 65 70 75 80
 Met Phe Phe Lys Thr Leu His Tyr Phe Leu Lys Cys Gly Leu Phe Glu
 85 90 95
 Phe Gln Phe Ser Val Asn Pro
 100

<210> 9170
 <211> 106
 <212> PRT
 <213> B.fragilis

<400> 9170
 Ile Asp Trp Thr Met Thr Asn Leu Gln Glu Leu Leu Leu Lys Pro Val
 1 5 10 15
 Trp Gln Met Thr Gly Glu Glu Phe Ile Phe Leu Ser Lys Tyr Ala Ser
 20 25 30
 Asn Gln Thr Glu Ala Gln Pro Gln Pro Val Thr Asp Thr Glu Arg Lys

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<210> 9171
<211> 442
<212> PRT
<213> B.fragilis
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Ile	Ile	Phe	Ala	Thr	Thr	Ile	Asn	Ile	Arg	Met	Glu	Asn	Asn	Arg	Glu
1				5					10					15	
Tyr	His	Ile	Gly	Arg	Thr	Asp	Phe	Asp	Ala	Phe	Val	His	Ala	Val	Gly
			20					25					30		
Ser	Glu	Ile	Glu	Gln	Ala	Gln	Val	Arg	Leu	Ile	Ala	Ala	Ala	Asn	Ala
			35					40					45		
Gln	Met	Leu	Phe	His	Tyr	Trp	Lys	Met	Gly	Asn	Tyr	Ile	Leu	Tyr	His
						55					60				
Gln	Asn	Leu	Gln	Gly	Trp	Gly	Ser	Lys	Ile	Ile	Lys	Gln	Leu	Ala	Lys
65					70					75					80
Ala	Ile	Arg	Phe	Asn	Tyr	Pro	Glu	Lys	Lys	Gly	Tyr	Ser	Glu	Arg	Asn
				85					90					95	
Leu	Thr	Tyr	Met	Cys	Gln	Phe	Ala	Arg	Ser	Tyr	Pro	Leu	Asn	Val	Leu
			100						105					110	
Arg	Ser	Phe	Ile	Asp	Thr	Asp	Thr	Arg	Leu	Ser	Val	Pro	Ser	Ile	Gln
			115					120					125		
Asn	Val	Thr	Asp	Glu	Val	Leu	Lys	Leu	Asn	Asn	Gly	Gln	Phe	Thr	Gln
						135					140				
Glu	Leu	Thr	Ala	Gln	Ile	Gln	Ser	Ala	Asp	Cys	Gln	Ser	Leu	Glu	Ile
145					150					155					160
Thr	Gln	Glu	Val	Pro	Ala	Gln	Ile	Gln	Asp	Val	Glu	Lys	Thr	Val	Ser
				165					170					175	
Ala	Ile	Tyr	Arg	Met	Glu	Ile	Arg	Glu	Ile	Glu	Lys	Val	Phe	Leu	Lys
			180					185					190		
Ser	Pro	Val	Ala	Lys	Ile	Asn	Trp	Ala	Ser	Gln	Met	Val	Ile	Leu	Asn
			195				200					205			
Gly	Ser	Leu	Pro	Leu	Gly	Ile	Gly	Tyr	Trp	Tyr	Met	Lys	Gln	Ala	Val
					215						220				
Glu	Met	Gly	Trp	Ser	Ser	Asn	Val	Leu	Lys	Met	Gln	Ile	Glu	Asn	Asn
225					230					235					240
Leu	Tyr	Asn	Arg	Gln	Ile	Asn	Asn	Asn	Lys	Val	Asn	Asn	Phe	Thr	Ala
				245					250					255	
Thr	Leu	Pro	Ala	Pro	Gln	Ser	Asp	Leu	Ala	Asn	Tyr	Leu	Leu	Lys	Asp
			260					265					270		
Pro	Tyr	Ile	Phe	Asp	Leu	Ala	Gly	Ala	Lys	Glu	Lys	Ala	Asp	Glu	Arg
			275				280					285			
Asp	Ile	Glu	Glu	Gln	Leu	Val	Lys	His	Val	Thr	Arg	Tyr	Leu	Leu	Glu
			290			295					300				
Met	Gly	Asn	Gly	Phe	Ala	Phe	Val	Ala	Arg	Gln	Lys	His	Phe	Gln	Ile
305					310					315					320
Gly	Asn	Ser	Asp	Phe	Phe	Ala	Asp	Leu	Ile	Leu	Tyr	Ser	Ile	Pro	Leu
				325					330					335	
His	Ala	Tyr	Ile	Val	Val	Glu	Leu	Lys	Ala	Thr	Pro	Phe	Lys	Pro	Glu

340 345 350
 Tyr Ala Gly Gln Leu Asn Phe Tyr Ile Asn Val Val Asp Asp Lys Leu
 355 360 365
 Arg Gly Lys Asn Asp Asn Lys Thr Ile Gly Leu Leu Leu Cys Lys Gly
 370 375 380
 Lys Asp Glu Val Val Ala Gln Tyr Ala Leu Thr Gly Tyr Asp Gln Pro
 385 390 395 400
 Ile Gly Ile Ser Asp Tyr Gln Leu Ser Lys Ala Ile Pro Glu Asn Leu
 405 410 415
 Lys Ser Ala Leu Pro Ser Val Glu Glu Val Glu Glu Glu Leu Ala Ser
 420 425 430
 Phe Leu Asp Lys Asp Asn Asn Pro Gln Asn
 435 440

<210> 9172
 <211> 268
 <212> PRT
 <213> B.fragilis

<400> 9172
 Asp Asn Ser Ala Thr Tyr Thr Gly Leu Cys Leu Gly His Leu Pro Lys
 1 5 10 15
 Lys Val Phe Phe Leu Ser Glu Met Ser Gln Gln Phe Val Glu Asp Tyr
 20 25 30
 Met Phe Trp Leu Leu Thr Lys Lys Gly Cys Ser His Asn Thr Ser Thr
 35 40 45
 Lys Tyr Leu Lys Asn Phe Lys Lys Ile Ile Leu Leu Ser Leu Ala Lys
 50 55 60
 Gly Trp Leu Lys Lys Asp Pro Phe Ala Glu Tyr Lys Phe Thr Leu Glu
 65 70 75 80
 Ala Val Asp Arg Asp Phe Leu Glu Asp Ser Glu Ile Gln Lys Ile Leu
 85 90 95
 Ser Lys Glu Ile Ala Ile Ser Arg Leu Val Gln Val Arg Asp Thr Phe
 100 105 110
 Ile Phe Cys Phe Thr Gly Leu Ala Phe Ser Asp Val Lys Gln Leu
 115 120 125
 Lys Gln Glu Asp Ile Val Glu Asp Ser Asn Gly Val Lys Trp Ile Arg
 130 135 140
 Lys Glu Arg Gln Lys Thr Lys Ile Ile Cys Asn Ile Pro Leu Arg Asp
 145 150 155 160
 Ile Pro Leu Gln Ile Leu Lys Lys Tyr Glu Asn Asn Pro Gln Cys Val
 165 170 175
 Ile Lys Gly Val Leu Leu Pro Ile Leu Cys Asn Gln Lys Met Asn Ala
 180 185 190
 Tyr Leu Lys Glu Leu Gly Asp Ile Cys Gly Val Asn Lys Thr Ile Thr
 195 200 205
 Met His Thr Ala Arg His Thr Phe Ala Thr Tyr Ala Leu Ala Asn Gly
 210 215 220
 Val Ser Met Glu Ser Val Ala Lys Met Leu Gly His Thr Asn Leu Gln
 225 230 235 240
 Met Thr Arg His Tyr Ala Arg Thr Leu Asp Arg Ile Val Val Lys Glu
 245 250 255
 Leu Phe Gln Ile Lys Asp Asn Phe Glu Met Ala Asn
 260 265

<210> 9173
 <211> 75
 <212> PRT
 <213> B.fragilis

<400> 9173

Ser Ala Asp Ala Ile Gln Phe Ala Gly Tyr Leu Asp Phe Glu Pro Gly
 1 5 10 15
 Asp Trp Gln Tyr Arg Asp Gly Ser Ile Arg Val Arg Thr His Ile His
 20 25 30
 Phe Ala Gly Arg Ile Tyr Leu Leu Ile Gly Glu Lys Thr Glu Asp Glu
 35 40 45
 Asn Ser Ala Thr Thr Gln Gly Glu Glu His Cys Arg Ile Pro Tyr Leu
 50 55 60
 Tyr Val Ala Asp Arg Gly Phe Asp Pro Cys Gln
 65 70 75

<210> 9174

<211> 331

<212> PRT

<213> B.fragilis

<400> 9174

Gly Leu Ser Ala Leu Pro Leu Phe Leu Cys Trp Leu Leu Ser Arg Pro
 1 5 10 15
 Glu Ala Ile Ile Gly Asn Ile Ser Ala Thr Ile Val Gly Lys Leu Ser
 20 25 30
 Lys Ser Arg Leu Arg Asn Ser Thr Leu Leu Leu Trp Lys Arg Lys Ile
 35 40 45
 Glu Lys Thr Asn Ser Lys Lys His Arg Leu Lys Met Lys Arg Arg Asn
 50 55 60
 Leu Phe Leu Ala Cys Leu Leu Leu Phe Val Leu Pro Leu Ser Ala Ala
 65 70 75 80
 Arg Val Asp Thr Leu Met Val Lys Ser Pro Ser Met Asn Lys Glu Val
 85 90 95
 Gln Val Leu Val Val Thr Pro Asp Val Ala Leu Gly Lys Asn Ala Ala
 100 105 110
 Ala Cys Pro Val Leu Tyr Leu Leu His Gly Tyr Gly Gly His Ala Lys
 115 120 125
 Thr Trp Ile Gln Ile Lys Pro Asn Leu Pro Glu Ile Ala Asp Glu Lys
 130 135 140
 Gly Ile Ile Phe Val Cys Pro Asp Gly Lys Asp Ser Trp Tyr Trp Asp
 145 150 155 160
 Ser Pro Lys Asn Pro Ala Tyr Arg Tyr Glu Thr Phe Val Ser Ser Glu
 165 170 175
 Leu Val Asn Tyr Ile Asp Arg Asn Tyr Lys Thr Ile Ala Asp Arg Lys
 180 185 190
 Gly Arg Ala Ile Thr Gly Leu Ser Met Gly Gly His Gly Ala Met Trp
 195 200 205
 Leu Gly Ile Arg His Lys Asp Val Phe Gly Ala Ala Gly Ser Thr Ser
 210 215 220
 Gly Gly Val Asp Ile Arg Pro Phe Pro Lys Asn Trp Ser Met Asn Lys
 225 230 235 240
 Gln Leu Gly Glu Leu Ala Ser Asn Lys Arg Ile Trp Asp Glu His Thr
 245 250 255
 Val Val Asn Gln Leu Asp Lys Ile Gln Asn Gly Asp Leu Ala Leu Ile
 260 265 270
 Ile Asp Cys Gly Glu Asp Asp Phe Phe Leu Asn Val Asn Lys Asp Phe
 275 280 285
 His Asp Arg Leu Leu Gly Arg Lys Ile Asp His Asp Phe Ile Thr Arg
 290 295 300
 Pro Gly Glu His Asn Gly Lys Tyr Trp Asn Asn Ser Ile Asp Tyr Gln
 305 310 315 320

Ile Leu Phe Phe Ser Lys Phe Phe Ala Gly Glu
 325 330

<210> 9175
 <211> 62
 <212> PRT
 <213> B.fragilis

<400> 9175
 Met Val Lys Ala Ile Pro Ile Ile Ile Lys Gly Arg Gly Ile Lys Asn
 1 5 10 15
 Lys Ala Ala Ile Ala Asn Glu Thr Ile Val Thr Val Ser Cys Leu Asp
 20 25 30
 Thr Arg Glu Val Asn Asn Ser Glu Tyr Gly Ser Glu Leu Val Ser Thr
 35 40 45
 Ser Leu Arg Ser Ala Ser Cys Pro Ile Thr Lys Ala Val Phe
 50 55 60

<210> 9176
 <211> 431
 <212> PRT
 <213> B.fragilis

<400> 9176
 Tyr Asp Met Ala Lys Ile Gln Ile Lys Ser Glu Lys Leu Thr Pro Phe
 1 5 10 15
 Gly Gly Ile Phe Ser Ile Met Glu Lys Phe Asp Ser Met Leu Ser Pro
 20 25 30
 Val Ile Asp Ser Thr Leu Gly Gln Arg Cys Ser Ser Ile Phe Gly Tyr
 35 40 45
 Gln Phe Ser Glu Ile Val Arg Ser Leu Met Ser Val Tyr Phe Cys Gly
 50 55 60
 Gly Ser Cys Val Glu Asp Val Thr Ser Gln Leu Met Arg His Leu Ser
 65 70 75 80
 Tyr His Pro Thr Leu Arg Thr Cys Ser Ser Asp Thr Ile Leu Arg Ala
 85 90 95
 Ile Lys Glu Leu Thr Gln Glu Asn Ile Ser Tyr Thr Ser Asp Gln Gly
 100 105 110
 Lys Thr Tyr Asp Phe Asn Thr Ala Asp Lys Leu Asn Thr Leu Leu Ile
 115 120 125
 Asn Ala Leu Val Ser Thr Gly Glu Leu Lys Glu Ile Glu Glu Tyr Asp
 130 135 140
 Val Asp Phe Asp His Gln Phe Leu Glu Thr Glu Lys Tyr Asp Ala Lys
 145 150 155 160
 Pro Thr Tyr Lys Lys Phe Leu Gly Tyr Arg Pro Gly Val Tyr Val Ile
 165 170 175
 Gly Asp Lys Ile Val Tyr Ile Glu Asn Ser Asp Gly Asn Thr Asn Val
 180 185 190
 Arg Phe His Gln Ala Asp Thr His Lys Arg Phe Phe Ala Leu Leu Glu
 195 200 205
 Ser Gln Asn Ile Arg Val Asn Arg Phe Arg Ala Asp Cys Gly Ser Cys
 210 215 220
 Ser Lys Glu Ile Val Ser Glu Ile Glu Lys His Cys Lys His Phe Tyr
 225 230 235 240
 Ile Arg Ala Asn Arg Cys Ser Ser Leu Tyr Asn Asp Ile Phe Ala Leu
 245 250 255
 Arg Gly Trp Lys Thr Glu Glu Ile Asn Gly Ile Gln Phe Glu Leu Asn
 260 265 270
 Ser Ile Leu Val Glu Lys Trp Glu Gly Lys Cys Tyr Arg Leu Val Ile

275 280 285
 Gln Arg Gln Arg Arg Asn Ser Gly Asp Leu Asp Leu Trp Glu Gly Glu
 290 295 300
 Tyr Thr Tyr Arg Cys Ile Leu Thr Asn Asp Tyr Lys Ser Ser Thr Arg
 305 310 315 320
 Asp Ile Val Glu Phe Tyr Asn Leu Arg Gly Gly Lys Glu Arg Ile Phe
 325 330 335
 Asp Asp Met Asn Asn Gly Phe Gly Trp Ser Arg Leu Pro Lys Ser Phe
 340 345 350
 Met Ala Glu Asn Thr Val Phe Leu Leu Thr Ala Leu Ile His Asn
 355 360 365
 Phe Tyr Lys Thr Ile Met Ser Arg Leu Asp Thr Lys Ala Phe Gly Leu
 370 375 380
 Lys Lys Thr Ser Arg Ile Lys Ala Phe Val Phe Arg Phe Ile Ser Val
 385 390 395 400
 Pro Ala Lys Trp Ile Met Thr Ala Arg Gln Tyr Val Leu Asn Ile Tyr
 405 410 415
 Thr Glu Asn Arg Ala Tyr Ala Lys Pro Phe Lys Thr Glu Phe Gly
 420 425 430

<210> 9177
 <211> 746
 <212> PRT
 <213> B.fragilis

<400> 9177

Leu Ile Asn Phe Met Glu Leu Asn Lys Thr Phe Lys Asp Gly Leu Trp
 1 5 10 15
 Ser Lys Glu Ile Asn Val Arg Asp Phe Val Ser Asn Asn Ile Thr Pro
 20 25 30
 Tyr Lys Gly Asp Ala Ser Phe Leu Gln Gly Pro Thr Glu Arg Thr Lys
 35 40 45
 Ala Val Trp Asn His Cys Leu Lys Ala Leu Glu Glu Arg Asn Asn
 50 55 60
 Asn Gly Ile Arg Ala Leu Asp Tyr Thr Thr Val Ser Thr Ile Thr Ser
 65 70 75 80
 His Pro Ala Gly Tyr Ile Asp Lys Glu Asn Glu Leu Ile Val Gly Leu
 85 90 95
 Gln Thr Asp Gln Val Leu Lys Arg Ala Ile Lys Pro Phe Gly Gly Ile
 100 105 110
 Asn Val Val Met Lys Ala Cys Arg Glu Asn Gly Val Glu Val Asp Asp
 115 120 125
 Arg Val Lys Asp Ile Phe Thr His Tyr Arg Lys Thr His Asn Asp Gly
 130 135 140
 Val Phe Asp Val Tyr Thr Glu Glu Ile Arg Ser Phe Arg Ser Leu Gly
 145 150 155 160
 Phe Leu Thr Gly Leu Pro Asp Asn Tyr Ala Arg Gly Arg Ile Ile Gly
 165 170 175
 Asp Tyr Arg Arg Leu Ala Leu Tyr Gly Leu Asp Arg Leu Ile Glu Ala
 180 185 190
 Lys Lys Glu Asp Leu His Asn Leu Thr Gly Pro Met Thr Glu Ala Arg
 195 200 205
 Ile Arg Leu Arg Glu Glu Val Ala Glu Gln Ile Lys Ala Leu Lys Glu
 210 215 220
 Ile Lys Val Leu Gly Glu Tyr Tyr Gly Leu Asp Leu Ser Arg Pro Ala
 225 230 235 240
 Tyr Thr Ala Gln Glu Ala Val Gln Trp Val Tyr Met Ala Tyr Leu Ala
 245 250 255
 Ala Val Lys Glu Gln Asp Gly Ala Ala Met Ser Leu Gly Asn Val Ser

260 265 270
 Ser Phe Leu Asp Ile Tyr Leu Glu Tyr Glu Leu Ser Gln Gly Thr Ile
 275 280 285
 Thr Glu Thr Phe Ala Gln Glu Leu Ile Asp Gln Phe Val Ile Lys Leu
 290 295 300
 Arg Met Val Arg His Leu Arg Met Gln Ser Tyr Asn Asp Ile Phe Ala
 305 310 315 320
 Gly Asp Pro Thr Trp Val Thr Glu Ser Ile Gly Gly Arg Phe Asn Asp
 325 330 335
 Gly Arg Thr Lys Val Thr Lys Thr Ser Phe Arg Phe Leu Gln Thr Leu
 340 345 350
 Tyr Asn Leu Gly Pro Ser Pro Glu Pro Asn Met Thr Val Leu Trp Ser
 355 360 365
 Pro Glu Leu Pro Glu Gly Phe Lys Ala Phe Cys Ala Gln Val Ser Ile
 370 375 380
 Asp Thr Ser Ser Val Gln Tyr Glu Asn Asp Asp Leu Met Arg Glu Val
 385 390 395 400
 Arg Gln Ser Asp Asp Tyr Gly Ile Ala Cys Cys Val Ser Tyr Gln Glu
 405 410 415
 Ile Gly Lys Gln Ile Gln Phe Phe Gly Ala Arg Ala Asn Leu Ala Lys
 420 425 430
 Ala Leu Leu Ala Ile Asn Gly Arg Cys Glu Asn Thr Gly Thr
 435 440 445
 Val Met Val Lys Asp Ile Pro Val Leu Thr Gly Glu Thr Leu Lys Phe
 450 455 460
 Glu Glu Val Met Ala Asn Tyr Lys Lys Val Leu Ile Gln Ile Ala Arg
 465 470 475 480
 Val Tyr Asn Glu Ala Met Asn Ile Ile His Tyr Met His Asp Lys Tyr
 485 490 495
 Tyr Tyr Glu Lys Ala Gln Met Ala Phe Val Asp Thr Asp Pro Arg Ile
 500 505 510
 Asn Leu Ala Tyr Gly Val Ala Gly Leu Ser Ile Ala Ile Asp Ser Leu
 515 520 525
 Ser Ala Ile Lys Tyr Ala His Val Lys Ala Arg Arg Asn Asp Ile Gly
 530 535 540
 Leu Thr Glu Gly Phe Asp Ile Glu Gly Ala Phe Pro Cys Phe Gly Asn
 545 550 555 560
 Asp Asp Asp Arg Val Asp His Leu Gly Val Asp Leu Val Tyr Phe Phe
 565 570 575
 Ser Glu Glu Leu Lys Lys Leu Pro Val Tyr Lys Asn Ala Arg Pro Thr
 580 585 590
 Leu Ser Leu Leu Thr Ile Thr Ser Asn Val Met Tyr Gly Lys Lys Thr
 595 600 605
 Gly Ala Thr Pro Asp Gly Arg Ala Lys Gly Ile Ala Phe Ala Pro Gly
 610 615 620
 Ala Asn Pro Met His Gly Arg Asp Lys Asn Gly Ala Ile Ala Ser Leu
 625 630 635 640
 Ser Ser Val Ala Lys Leu Arg Tyr Arg Asp Ser Gln Asp Gly Ile Ser
 645 650 655
 Asn Thr Phe Ser Ile Val Pro Lys Ser Leu Gly Ala Thr Gln Glu Asp
 660 665 670
 Arg Ile Asp Asn Leu Val Thr Met Met Asp Gly Tyr Phe Thr Lys Gly
 675 680 685
 Ala His His Leu Asn Val Asn Val Leu Asn Arg Glu Met Leu Gln Asp
 690 695 700
 Ala Met Glu His Pro Glu Lys Tyr Pro Gln Leu Thr Ile Arg Val Ser
 705 710 715 720
 Gly Tyr Ala Val Asn Phe Val Lys Leu Ser Arg Glu His Gln Leu Glu
 725 730 735

Val Ile Ser Arg Ser Phe His Glu Arg Met
740 745

<210> 9178

<211> 1111

<212> PRT

<213> B.fragilis

<400> 9178

Lys His Phe Leu Ile Lys Lys Lys Asn Lys Met Lys Lys Ser Val Lys
1 5 10 15
His Lys Phe Gln Tyr Leu Leu Phe Phe Leu Leu Ser Met Pro Ala Phe
20 25 30
Ile Phe Ala Ser Ala Gln Asp Ile Arg Val Asn Ile Asp Phe Thr Lys
35 40 45
Ala Ser Leu Gly Ser Val Leu Asn Glu Ile Gly Arg Gln Thr Ser Leu
50 55 60
Ser Ile Val Tyr Asn Thr Gly Asp Val Asn Pro Thr Gln Pro Val Ser
65 70 75 80
Ile Lys Ala Ser Asn Glu Asn Ile Thr Thr Val Met Asn Arg Leu Leu
85 90 95
Arg Gly Thr Gly Leu Ser Tyr Ser Ile Met Asn Lys His Leu Ile Leu
100 105 110
Ser Thr Thr Asp Lys Asn His Ser Ile Gln Gln Glu Lys Val Thr Val
115 120 125
Thr Gly Asn Ile Ser Asp Ala Lys Gly Glu Pro Leu Ile Gly Val Ser
130 135 140
Ile Leu Val Lys Gly Thr Ser Asn Gly Thr Ile Thr Asp Met Asn Gly
145 150 155 160
His Phe Ser Leu Pro Val Ala Lys Gly Asp Val Ile Glu Ile Ser Tyr
165 170 175
Ile Gly Tyr Ala Pro Gln Ala Ile Thr Val Thr Asp Ser Lys Pro Leu
180 185 190
Lys Ile Val Met Lys Glu Asp Ala Glu Val Leu Asp Glu Val Val Val
195 200 205
Thr Ala Leu Gly Ile Lys Arg Ala Gln Lys Ala Leu Ser Tyr Asn Val
210 215 220
Gln Gln Val Gly Gly Asp Ala Ile Asn Thr Val Lys Asp Ala Asn Phe
225 230 235 240
Ile Asn Ser Leu Gln Gly Lys Val Ala Gly Val Thr Ile Asn Asn Ser
245 250 255
Ala Gly Gly Val Gly Ser Ala Ser Arg Val Val Met Arg Gly Thr Lys
260 265 270
Ser Ile Thr Lys Asp Asn Asn Ala Leu Tyr Val Ile Asp Gly Ile Pro
275 280 285
Met Phe Asn Val Ser Phe Gly Lys Ser Glu Gly Ser Phe Ala Thr Gln
290 295 300
Ser Gly Ser Asp Gly Val Ala Asp Leu Asn Pro Asp Asp Ile Glu Ser
305 310 315 320
Ile Asn Met Leu Thr Gly Pro Ser Ala Ala Leu Tyr Gly Asn Ala
325 330 335
Ala Ala Asn Gly Val Val Leu Ile Asn Thr Lys Lys Gly Ser Ala Glu
340 345 350
Lys Thr Thr Leu Thr Val Ser Asn Asn Thr Met Phe Ser Asp Ala Tyr
355 360 365
Met Met Pro Glu Met Gln Asn Arg Tyr Gly Asn Asn Pro Gly Glu Phe
370 375 380
Ala Ser Trp Gly Asn Lys Thr Lys Gln Ser Tyr Asp Pro Ser Arg Phe
385 390 395 400

Phe Asn Thr Gly Val Asn Val Ile Asn Ala Ile Ser Phe Ser Thr Gly
 405 410 415
 Thr Lys Lys Asn Gln Thr Tyr Ala Ser Ala Ser Thr Thr Asn Ala Thr
 420 425 430
 Gly Ile Leu Pro Asn Asn Ser Tyr Ser Arg Tyr Asn Phe Ser Ile Arg
 435 440 445
 Asn Thr Ala Thr Phe Leu Lys Asp Arg Leu Thr Leu Asp Val Gly Ala
 450 455 460
 Ser Tyr Ile Ile Gln Asn Asp Lys Asn Ile Thr Ala Gln Gly Gln Tyr
 465 470 475 480
 Phe Asn Pro Leu Pro Ala Leu Tyr Leu Phe Pro Arg Asn Asp Asn Phe
 485 490 495
 Glu Glu Ile Arg Met Phe Glu Arg Tyr Ser Glu Ser Arg Gly Val Asn
 500 505 510
 Val Gln Phe Trp Pro Tyr Gly His Gln Gly Leu Ser Leu Gln Asn Pro
 515 520 525
 Tyr Trp Ile Met Lys Arg Met Asn Arg Lys Thr Glu Lys Lys Arg Tyr
 530 535 540
 Met Ile Asn Ala Ser Leu Thr Tyr Lys Leu Thr Asp Trp Leu Asn Val
 545 550 555 560
 Ala Gly Arg Val Lys Val Asp Asn Ser Asp Ile Arg Met Thr Gln Glu
 565 570 575
 Arg Tyr Ala Ser Thr Leu Thr Thr Phe Ala Gly Ala Asn Gly Phe Tyr
 580 585 590
 Ser Asp Gln Asn Arg Thr Asp Arg Asn Thr Tyr Ala Asp Met Met Val
 595 600 605
 Asn Ile Asp Lys Arg Ile Gly Asp Phe Ser Leu Asn Ala Asn Ile Gly
 610 615 620
 Ala Ser Ile Lys Asp Leu Val Tyr Glu Gln Met Gly Asn Glu Gly Asp
 625 630 635 640
 Leu Ala Gly Ile Pro Asn Phe Phe Thr Val Arg Asn Ile Asn Tyr Glu
 645 650 655
 Ser Asn Tyr Lys Pro Lys Gln Phe Gly Tyr His Asp Gln Ser Gln Gly
 660 665 670
 Val Phe Ala Asn Ile Glu Leu Gly Trp Arg Ser Met Ala Tyr Leu Thr
 675 680 685
 Leu Thr Gly Arg Asn Asp Trp Glu Ser Gln Leu Ala Phe Thr Lys His
 690 695 700
 Ser Ser Phe Phe Tyr Pro Ser Ile Gly Gly Ser Val Val Leu Ser Glu
 705 710 715 720
 Met Phe Arg Leu Pro Glu Phe Ile Ser Tyr Ala Lys Leu Arg Gly Ser
 725 730 735
 Tyr Ser Ser Val Ala Ser Ser Phe Glu Arg Tyr Leu Ser Asn Pro Gly
 740 745 750
 Phe Glu Phe Asn Glu Gln Ser His Gln Trp Gly Ser Ser Thr Thr Leu
 755 760 765
 Pro Ala Thr Asn Leu Lys Pro Glu Asp Thr Arg Ser Trp Glu Ile Gly
 770 775 780
 Leu Asn Ala Arg Leu Trp Asn His Phe Ser Ile Asp Ala Thr Tyr Tyr
 785 790 795 800
 His Ser Asn Thr Tyr Asn Gln Thr Phe Asn Ile Thr Leu Ala Ser Ser
 805 810 815
 Ser Gly Tyr Ser Ser Ala Ile Val Gln Thr Gly Asn Ile Gln Asn Tyr
 820 825 830
 Gly Leu Glu Leu Ala Leu Gly Tyr Asn Asn Thr Trp Gly Asp Phe Ser
 835 840 845
 Trp Asn Ser Ser Leu Thr Tyr Thr Met Asn Arg Asn Lys Val Lys Arg
 850 855 860
 Leu Ala Ser Gly Ala Thr Asn Pro Ile Thr Gly Glu Ile Ile Asp Met

865 870 875 880
 Pro Glu Leu Arg Met Ala Val Leu Gly Ala Asp Gly Tyr Gly Pro Arg
 885 890 895
 Val Ile Leu Arg Glu Gly Gly Thr Met Gly Asp Leu Tyr Val Asp Lys
 900 905 910
 Gly Leu Arg Thr Asp Gly Asn Gly Asn Ile Trp Val Asp Ser Gln Thr
 915 920 925
 Gly Lys Val Gly Val Gln Asp Tyr Ala Glu Pro Lys Lys Ile Gly Thr
 930 935 940
 Met Asn Pro Asp Phe Asn Met Gly Phe Ser Asn Thr Phe Ser Tyr Lys
 945 950 955 960
 Gly Ile Asn Leu Gly Val Val Leu Thr Ala Arg Val Gly Gly Leu Cys
 965 970 975
 Val Ser Asn Thr Gln Gly Ile Leu Asp Tyr Tyr Gly Val Ser Lys Ala
 980 985 990
 Thr Ala Asp Ala Arg Asp Ala Gly Gly Val Trp Ile Asn Asn Gly Phe
 995 1000 1005
 Val Asp Ala Lys Ser Tyr Tyr Gln Thr Ile Gly Gly Ser Thr Gly Gly
 1010 1015 1020
 Leu Gly Gln Tyr Tyr Thr Tyr Ser Ala Thr Asn Ile Arg Leu Ser Glu
 1025 1030 1035 1040
 Leu Asn Leu Ser Tyr Thr Leu Pro Arg Lys Trp Phe Asn Asn Lys Val
 1045 1050 1055
 Gly Ile Thr Ala Gly Ile Val Gly Lys Asn Leu Trp Met Ile Tyr Cys
 1060 1065 1070
 Lys Ala Pro Phe Asp Pro Glu Met Thr Pro Ser Thr Thr Ser Asn Phe
 1075 1080 1085
 Tyr Gln Gly Val Asp Tyr Phe Met Gln Pro Ser Thr Arg Asn Ile Gly
 1090 1095 1100
 Phe Asn Val Lys Phe Gln Phe
 1105 1110

<210> 9179
 <211> 68
 <212> PRT
 <213> B.fragilis

<400> 9179
 Met Lys Ser Tyr Arg Leu Pro Cys Phe Val Cys Pro Val Pro Asp Lys
 1 5 10 15
 Trp Gly Val Ala Phe Val Leu Ile Pro Phe Ser Ser Phe Ser Cys Gln
 20 25 30
 Lys Glu Lys Asn Ile Pro Trp Gly Val Thr Gly Ser Phe Ala Val Gln
 35 40 45
 Val Lys Arg Glu Glu Arg Arg Cys Arg Asn Arg Ala Phe Phe Pro Gln
 50 55 60
 Lys Ala Gly Phe
 65

<210> 9180
 <211> 76
 <212> PRT
 <213> B.fragilis

<400> 9180
 Ala Phe His Tyr Tyr Leu Leu Pro Ser Asn Gln Lys Val Asn Ala Tyr
 1 5 10 15
 Leu Lys Glu Ile Thr Asp Ile Cys Asp Ile His Lys Asn Leu Thr Phe
 20 25 30

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<210> 9181
<211> 79
<212> PRT
<213> B.fragilis
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<210> 9182
<211> 130
<212> PRT
<213> B.fragilis
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<210> 9183
<211> 394
<212> PRT
<213> B.fragilis
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<400> 9183
Val  Pro  Gly  Tyr  Cys  Leu  Arg  Thr  Met  Ser  Arg  Cys  Pro  Ser  Arg  Phe
1      5      10     15
Glu  Lys  Ile  Val  Tyr  Gly  Phe  Ala  Asn  Lys  Arg  Ser  Arg  His  Met  Ile
      20     25     30

```

Phe Asn Arg Glu Glu Gln His Leu Met Leu Glu Gly Ser Val Leu Ser
 35 40 45
 Lys Glu Asp Val Lys Arg Leu Val Ala Cys His Thr Glu Glu Ala Ser
 50 55 60
 Gly Phe Leu Tyr Glu Leu Tyr Arg Phe Leu Glu Glu Trp Phe Ser Asp
 65 70 75 80
 Ser Pro Tyr Leu Thr Val Lys Thr Ser Gly Ser Thr Gly Thr Pro Lys
 85 90 95
 Leu Leu Lys Val Arg Lys Glu Gln Met Met Gln Ser Ala Arg Leu Thr
 100 105 110
 Cys Glu Phe Leu Gly Leu Arg Gln Gly Asp Ser Val Leu Leu Cys Met
 115 120 125
 Pro Leu Gln Tyr Ile Ala Gly Lys Met Val Val Val Arg Ala Leu Val
 130 135 140
 Ala Gly Leu Asn Leu Val Ile Arg Thr Pro Ser Gly His Pro Met Ala
 145 150 155 160
 Asp Val Asp Ile Pro Leu Arg Phe Ala Ala Met Val Pro Leu Gln Val
 165 170 175
 Tyr Asn Thr Leu Gln Val Ser Ala Glu Lys Glu Arg Leu Cys Arg Thr
 180 185 190
 Asp Ile Leu Ile Ile Gly Gly Gly Ala Ile Asp Ala Gly Leu Glu Ala
 195 200 205
 Glu Ile Arg Gln Leu Pro Val Lys Val Tyr Ser Thr Tyr Gly Met Thr
 210 215 220
 Glu Thr Leu Ser His Ile Ala Leu Arg Gln Leu Asn Gly Pro Asp Ala
 225 230 235 240
 Ser Met Leu Tyr Arg Pro Phe Pro Ser Val Arg Leu Ser Leu Ser Ser
 245 250 255
 Glu His Thr Leu Val Ile Asp Ala Pro Leu Val Cys Asp Thr Thr Leu
 260 265 270
 Val Thr Asn Asp Val Ala Glu Ile Tyr Pro Asp Gly Ser Phe Ser Ile
 275 280 285
 Leu Gly Arg Lys Asp Asn Thr Ile Asn Thr Gly Gly Ile Lys Val Gln
 290 295 300
 Ala Glu Gln Ile Glu Glu Ile Leu Arg Pro Trp Met Arg Val Pro Phe
 305 310 315 320
 Ala Ile Thr Ser Val Pro Asp Ala Arg Leu Gly Glu Ala Val Val Leu
 325 330 335
 Leu Val Glu Lys Gly Ala Asp Ala Glu Leu Pro Glu Thr Lys Met Lys
 340 345 350
 Glu Leu Leu Ser Lys Tyr Gln Leu Pro Lys Met Ile Leu Ser Val Gly
 355 360 365
 Ala Ile Pro Leu Thr Glu Thr Gly Lys Ile Asn Arg Ala Ala Cys Arg
 370 375 380
 Gln Leu Ala Leu Thr Tyr Arg Thr Asp Arg
 385 390

<210> 9184

<211> 70

<212> PRT

<213> B.fragilis

<400> 9184

Cys Phe Ser Leu Lys Ala Leu Gln Arg Tyr Glu Ser Phe Phe Asn Leu
 1 5 10 15
 Gln Ile Ile Pro Gln Lys Asn Ile Arg Lys Val Tyr Leu Glu Val Ile
 20 25 30
 Thr Ala Leu Trp Leu Leu Pro Ile Asn Arg Tyr Phe Tyr Ala Ile Gln
 35 40 45

His Lys Ile Gly Pro Phe Tyr Ile Pro Lys Pro Lys Lys Gly Cys Lys
 50 55 60
 Phe Ala Arg Ser Lys Gly
 65 70

<210> 9185

<211> 354

<212> PRT

<213> B.fragilis

<400> 9185

Thr Val Leu Tyr Val Thr Val Tyr Asp Ile Gly Ile Lys Asp Leu Val
 1 5 10 15
 Lys Thr Met Asp Glu Thr Lys Leu Leu Asn Tyr Leu Lys Gly Glu Ser
 20 25 30
 Asp Ala Glu Glu Cys Leu Glu Val Glu Ala Trp Tyr His Ala Ser Ala
 35 40 45
 Glu His Lys Lys Gln Leu Asp Gln Leu Tyr Tyr Met Leu Phe Val Gly
 50 55 60
 Glu Arg Lys Val Ala Met Asp Gly Val Asp Thr Glu Asn Ser Leu Ser
 65 70 75 80
 Val Leu Lys Asp Arg Ile Lys His Lys Glu Ser Glu Lys Lys Ser Val
 85 90 95
 His Arg Ile Arg Val Ser Lys Trp Lys Arg Tyr Ala Met Pro Leu Ala
 100 105 110
 Ala Phe Leu Cys Gly Leu Leu Val Ser Val Gly Ala Leu Tyr Trp Ile
 115 120 125
 Ser Ser Gly Lys Ser Ala Gly Tyr Ile Phe Ala Thr Glu Ser Gly Gln
 130 135 140
 Arg Ala Gln Ala Val Leu Pro Asp Gly Thr Lys Val Trp Leu Asn Ala
 145 150 155 160
 Ser Thr Gln Ile Val Tyr Lys Pro Ser Phe Trp Lys Arg Glu Arg Gln
 165 170 175
 Val Asp Leu Ser Gly Glu Ala Tyr Phe Glu Val Ser Arg Asn Lys Thr
 180 185 190
 Lys Pro Phe Val Val Asn Ser Asn Asp Val Arg Thr Cys Val Leu Gly
 195 200 205
 Thr Lys Phe Asn Val Arg Ala Arg Pro Ser Glu Glu Lys Val Val Thr
 210 215 220
 Thr Leu Leu Lys Gly Ser Val Lys Val Gln Leu Pro Gly Gln Ser Glu
 225 230 235 240
 Glu Glu Gly Ile Leu Leu Lys Pro Gly Gln Met Leu Ser Val Asp Thr
 245 250 255
 Arg Thr Met Gln Pro Met Leu Thr Glu Ala Asn Arg Pro Gly Asp Val
 260 265 270
 Leu Leu Trp Ile Asn Gly Lys Leu Lys Phe Glu Gln Ala Thr Leu Gln
 275 280 285
 Glu Ile Val Gln Cys Leu Glu Lys His Phe Asp Val His Phe Ile Ile
 290 295 300
 Ser Asp Ala Gln Leu Gln Lys Asp Arg Phe Thr Cys Thr Phe Ser Thr
 305 310 315 320
 Asp Asp Asp Ile Arg Gln Ile Leu Ser Ile Leu Ala Leu Thr Lys Arg
 325 330 335
 Phe Asp Tyr Lys Cys Glu Asp Asn Asn Ile Ile Leu Thr Pro Lys Thr
 340 345 350
 Asn Arg

<210> 9186

<211> 833
 <212> PRT
 <213> B.fragilis

<400> 9186

Phe	Met	Ile	Tyr	Pro	Gln	Asn	Phe	Glu	Gln	Lys	Ile	Gly	Phe	Asp	Gln
1				5					10					15	
Ile	Arg	Gln	Leu	Leu	Lys	Asp	Lys	Cys	Leu	Ser	Thr	Leu	Gly	Glu	Glu
		20						25					30		
Arg	Val	Asn	Glu	Met	Asn	Phe	Ser	Asp	His	Phe	Glu	Glu	Val	Asp	Glu
		35					40					45			
Leu	Leu	Asn	Gln	Val	Ala	Glu	Phe	Val	Arg	Ile	Ile	Gln	Glu	Glu	Asp
	50					55					60				
Asn	Phe	Pro	Asp	Gln	Phe	Phe	Phe	Asp	Val	Arg	Pro	Ser	Leu	Lys	Arg
65				70					75					80	
Ile	Arg	Ile	Glu	Gly	Met	Tyr	Met	Asp	Glu	Gln	Glu	Leu	Phe	Asp	Leu
			85					90						95	
Arg	Arg	Ser	Leu	Glu	Thr	Ile	Arg	Asp	Ile	Ile	Arg	Phe	Leu	Gln	Arg
		100						105					110		
Asn	Asp	Glu	Glu	Glu	Ser	Asp	Cys	Pro	Tyr	Pro	Ser	Leu	Lys	Lys	Leu
	115						120					125			
Ala	Gly	Asp	Ile	Thr	Val	Phe	Pro	Gln	Leu	Ile	Thr	Lys	Ile	Asp	Gly
	130					135					140				
Ile	Leu	Asn	Lys	Tyr	Gly	Lys	Ile	Lys	Asp	Asn	Ala	Ser	Thr	Glu	Leu
145				150					155					160	
Ser	Arg	Ile	Arg	Arg	Glu	Leu	Ala	Asn	Thr	Met	Gly	Ser	Ile	Ser	Arg
			165					170						175	
Ser	Leu	Asn	Ser	Ile	Leu	Arg	Asn	Ala	Gln	Ser	Glu	Gly	Tyr	Val	Asp
		180					185						190		
Lys	Asp	Val	Ala	Pro	Thr	Met	Arg	Asp	Gly	Arg	Leu	Val	Ile	Pro	Val
	195						200					205			
Ala	Pro	Gly	Leu	Lys	Arg	Lys	Ile	Lys	Gly	Ile	Val	His	Asp	Glu	Ser
	210					215					220				
Ala	Ser	Gly	Lys	Thr	Val	Phe	Ile	Glu	Pro	Ala	Glu	Val	Val	Glu	Ala
225				230					235					240	
Asn	Asn	Arg	Ile	Arg	Glu	Leu	Glu	Gly	Asp	Glu	Arg	Arg	Glu	Ile	Ile
			245					250						255	
Arg	Ile	Leu	Thr	Glu	Phe	Ser	Asn	Thr	Leu	Arg	Pro	Ser	Ile	Pro	Glu
		260						265						270	
Ile	Leu	Gln	Ser	Tyr	Glu	Phe	Leu	Ala	Glu	Ile	Asp	Phe	Ile	Arg	Ala
	275						280					285			
Lys	Ser	His	Phe	Ala	Ile	Gln	Thr	Asn	Ser	Ile	Lys	Pro	Ser	Leu	Glu
	290					295					300				
Asn	Glu	Gln	Leu	Leu	Asp	Trp	Thr	Met	Ala	Val	His	Pro	Leu	Leu	Gln
305				310					315					320	
Leu	Ser	Leu	Ala	Lys	His	Gly	Lys	Lys	Val	Val	Pro	Leu	Asp	Ile	Glu
			325					330						335	
Leu	Asn	Leu	Lys	Arg	Arg	Ile	Leu	Ile	Ile	Ser	Gly	Pro	Asn	Ala	Gly
		340					345						350		
Gly	Lys	Ser	Val	Cys	Leu	Lys	Thr	Val	Gly	Leu	Leu	Gln	Tyr	Met	Leu
	355						360					365			
Gln	Cys	Gly	Met	Leu	Val	Pro	Met	His	Glu	Arg	Ser	His	Val	Gly	Leu
	370					375					380				
Phe	Gly	Ser	Ile	Phe	Ile	Asp	Ile	Gly	Asp	Glu	Gln	Ser	Ile	Glu	Asp
385				390					395					400	
Asp	Leu	Ser	Thr	Tyr	Ser	Ser	His	Leu	Thr	Asn	Met	Lys	Ile	Met	Met
			405					410						415	
Lys	Asn	Cys	Asn	Glu	Arg	Ser	Leu	Ile	Leu	Ile	Asp	Glu	Phe	Gly	Gly
			420					425						430	

Gly Thr Glu Pro Gln Ile Gly Gly Ala Ile Ala Glu Ala Val Leu Lys
 435 440 445
 Arg Phe Asn Ile Lys Gly Thr Phe Gly Val Ile Thr Thr His Tyr Gln
 450 455 460
 Asn Leu Lys His Phe Ala Glu Asp His Glu Gly Val Val Asn Gly Ala
 465 470 475 480
 Met Leu Tyr Asp Arg His Leu Met Gln Ala Leu Phe Gln Leu Gln Ile
 485 490 495
 Gly Asn Pro Gly Ser Ser Phe Ala Val Glu Ile Ala Arg Lys Ile Gly
 500 505 510
 Leu Pro Glu Asp Val Ile Ala Asp Ala Ser Glu Ile Val Gly Ser Glu
 515 520 525
 Tyr Ile Asn Ala Asp Lys Tyr Leu Gln Asp Ile Val Arg Asp Lys Arg
 530 535 540
 Tyr Trp Glu Gly Lys Arg Gln Thr Ile Arg Gln Arg Glu Lys His Met
 545 550 555 560
 Glu Glu Thr Ile Ala Arg Tyr Gln Ala Glu Met Glu Glu Leu Gln Lys
 565 570 575
 Ser Arg Lys Glu Ile Ile Arg Gln Ala Lys Glu Glu Ala Glu Arg Leu
 580 585 590
 Leu Gln Glu Ser Asn Ala Arg Ile Glu Asn Thr Ile Arg Thr Ile Lys
 595 600 605
 Glu Ala Gln Ala Glu Lys Glu Lys Thr Arg Leu Val Arg Gln Glu Leu
 610 615 620
 Ala Asp Phe Arg Glu Ser Ile Asp Asn Leu Thr Ser Lys Glu Gln Glu
 625 630 635 640
 Asp Lys Ile Ala Arg Lys Met Glu Lys Leu Lys Glu Lys Gln Asn Arg
 645 650 655
 Lys Lys Glu Lys Lys Gln Asn Gly Thr Lys Glu Gln Pro Ala Val Gln
 660 665 670
 Gln Thr Pro Lys Ala Thr Pro Ile Thr Glu Gly Cys Pro Val Arg Ile
 675 680 685
 Lys Gly Gln Ser Ser Val Gly Glu Val Leu Glu Ile Asn Gly Lys Asn
 690 700
 Ala Val Val Ala Phe Gly Ser Ile Lys Thr Thr Val Lys Thr Glu Arg
 705 710 715 720
 Leu Glu Arg Ser Asn Ala Val Pro Gln Lys Gln Glu Ser Ala Lys Ser
 725 730 735
 Ser Phe Val Ser Asn Gln Thr Gln Asp Ser Met Tyr Glu Lys Lys Leu
 740 745 750
 Asn Phe Lys Gln Asp Ile Asp Val Arg Gly Met Arg Gly Asp Glu Ala
 755 760 765
 Leu Gln Ala Val Thr Tyr Phe Val Asp Asp Ala Ile Leu Val Gly Met
 770 775 780
 Ser Arg Val Arg Ile Leu His Gly Thr Gly Thr Gly Ile Leu Arg Thr
 785 790 795 800
 Leu Ile Arg Gln Tyr Leu Gln Thr Ile Pro Gly Val Arg His Phe Ala
 805 810 815
 Asp Glu His Ile Gln Leu Gly Gly Ala Gly Ile Thr Val Val Asp Leu
 820 825 830
 Ala

<210> 9187

<211> 512

<212> PRT

<213> B.fragilis

<400> 9187

Ser Cys Pro Tyr Phe Thr Ser Phe Ser Gly Gly Thr Phe Glu Lys Val
 1 5 10 15
 Ile Ser Arg Arg Asn Leu Cys Gln His Glu Ser Phe Leu Tyr Phe Cys
 20 25 30
 Ala Ile Phe Leu Lys Thr Thr Ser Lys Lys Asn His Met Gly Gly Phe
 35 40 45
 Phe Gly Thr Val Ser Lys Thr Ser Cys Val Thr Asp Leu Phe Tyr Gly
 50 55 60
 Thr Asp Tyr Asn Ser His Leu Gly Thr Lys Arg Gly Gly Leu Ala Thr
 65 70 75 80
 Tyr Ser Glu Glu Gln Gly Phe Ile Arg Ser Ile His Asn Leu Gln Ser
 85 90 95
 Ser Tyr Phe Arg Thr Lys Phe Glu Glu Glu Leu Asp Lys Phe Lys Gly
 100 105 110
 Asn Ala Gly Ile Gly Ile Ile Ser Asp Thr Asp Ala Gln Pro Ile Ile
 115 120 125
 Ile Asn Ser His Leu Gly Arg Phe Ala Ile Val Thr Val Ala Lys Val
 130 135 140
 Thr Asn Leu Lys Glu Leu Glu Glu Glu Leu Ser Gln Asn Met His
 145 150 155 160
 Phe Ala Glu Leu Ser Ser Gly Ser Thr Asn Gln Thr Glu Leu Ile Ala
 165 170 175
 Leu Leu Ile Ile Gln Gly Lys Asn Phe Val Glu Gly Ile Glu Asn Val
 180 185 190
 Tyr Asn His Ile Lys Gly Ser Cys Ser Met Leu Leu Leu Thr Glu Asp
 195 200 205
 Gly Val Ile Ala Ala Arg Asp Lys Trp Gly Arg Thr Pro Ile Val Ile
 210 215 220
 Gly Lys Lys Glu Gly Ala Tyr Ala Ala Thr Ser Glu Ser Asn Ser Phe
 225 230 235 240
 Pro Asn Leu Asp Phe Glu Ile Glu Arg Tyr Leu Gly Pro Gly Glu Ile
 245 250 255
 Val Arg Met His Ala Asp Arg Leu Glu Gln Leu Arg Lys Pro Asp Asp
 260 265 270
 Lys Met Gln Ile Cys Ser Phe Leu Trp Val Tyr Tyr Gly Phe Pro Asn
 275 280 285
 Ser Cys Tyr Glu Gly Arg Asn Val Glu Glu Val Arg Phe Thr Ser Gly
 290 295 300
 Leu Lys Met Gly Glu Gln Asp Asp Cys Asp Ala Asp Cys Val Cys Gly
 305 310 315 320
 Ile Pro Asp Ser Gly Ile Gly Gln Ala Leu Gly Tyr Ala Glu Gly Lys
 325 330 335
 Gly Ile Pro Tyr His Arg Ala Ile Thr Lys Tyr Thr Pro Thr Trp Pro
 340 345 350
 Arg Ser Phe Thr Pro Ser Lys Gln Glu Leu Arg Ser Leu Val Ala Lys
 355 360 365
 Met Lys Leu Ile Pro Asn Arg Ala Met Leu Gln Asp Lys Arg Ile Ile
 370 375 380
 Phe Cys Asp Asp Ser Ile Val Arg Gly Thr Gln Leu His Asp Asn Val
 385 390 395 400
 Lys Ile Leu Phe Asp Tyr Gly Ala Lys Glu Val His Met Arg Ile Gly
 405 410 415
 Cys Pro Pro Leu Ile Tyr Gly Cys Pro Phe Ile Gly Phe Thr Ala Ser
 420 425 430
 Lys Ser Asp Met Glu Leu Ile Thr Arg Gln Ile Ile Lys Glu Leu Glu
 435 440 445
 Gly Asp Glu Asn Lys Asn Leu Asp Lys Tyr Ala Thr Thr Gly Ser Pro
 450 455 460
 Glu Tyr Glu Lys Met Val Gly Ile Ile Ala Lys Arg Phe Gly Leu Ser

465 470 475 480
 Ser Leu Lys Phe Asn Thr Ile Glu Thr Leu Ile Glu Ala Ile Gly Leu
 485 490 495
 Pro Lys Cys Lys Val Cys Thr His Cys Phe Asp Gly Ser Ser Cys Phe
 500 505 510

<210> 9188
 <211> 526
 <212> PRT
 <213> B.fragilis

<400> 9188
 Ile Ile His Leu Lys Ser Ile Phe Asp Ile Met Leu Asp Ser Ala Ile
 1 5 10 15
 Lys Glu Gln Leu Arg Thr Ile Phe Ala Ala Leu Glu Ala Asn Tyr Thr
 20 25 30
 Phe Asp Ile Thr Val Ser Pro Gln His Glu Ser Arg Thr Glu Leu Leu
 35 40 45
 Glu Leu Leu Asn Asp Val Ala Ser Cys Ser Glu Lys Leu Ser Cys Arg
 50 55 60
 Ile Asn Glu Gly Lys Gly Leu Glu Phe Thr Leu Leu Lys Gly Glu His
 65 70 75 80
 Arg Thr Gly Ile Thr Phe Arg Ala Val Pro Asn Gly His Glu Phe Ser
 85 90 95
 Ser Leu Leu Leu Ala Ile Leu Asn Thr Asp Gly Lys Gly Lys Asn Phe
 100 105 110
 Pro Asp Glu Gly Ile Cys Asn Arg Val Lys Ser Leu Lys Gly Pro Val
 115 120 125
 Arg Leu Thr Thr Tyr Val Ser Leu Thr Cys Thr Asn Cys Pro Asp Val
 130 135 140
 Val Gln Ala Leu Asn Ala Met Thr Thr Leu Asn Gly Gln Ile Gln His
 145 150 155 160
 Gln Thr Val Asp Gly Ala Ile Asn Gln Ala Glu Val Glu Ala Leu Lys
 165 170 175
 Ile Gln Gly Val Pro Ser Val Phe Ala Asp Gly Lys Leu Ile His Val
 180 185 190
 Gly Arg Gly Asp Phe Gly Glu Leu Ala Lys Leu Glu Glu Gln Tyr
 195 200 205
 Gly Thr Glu Thr Asn Ser Ala Glu Thr Ser Ile Lys Lys Tyr Asp Val
 210 215 220
 Ile Val Ala Gly Gly Gly Pro Ala Gly Ser Ala Ala Ala Ile Tyr Ser
 225 230 235 240
 Ala Arg Lys Gly Leu Asn Val Ala Val Ile Ala Glu Arg Ile Gly Gly
 245 250 255
 Gln Val Lys Glu Thr Val Gly Ile Glu Asn Leu Ile Ser Val Pro Ser
 260 265 270
 Thr Thr Gly Ser Gln Leu Ala Asp Asn Leu Lys Thr His Met Ser Gln
 275 280 285
 Tyr Pro Ile Asp Leu Leu Glu His Arg Gln Ile Glu Lys Ile Glu Leu
 290 295 300
 Asp Gly Lys Asp Lys Val Leu Thr Ala Lys Gly Gly Glu Arg Phe Ser
 305 310 315 320
 Ala Pro Ala Val Ile Val Ala Thr Gly Ala Ser Trp Arg Lys Leu Asn
 325 330 335
 Val Pro Gly Glu Ala Glu Tyr Ile Gly Arg Gly Val Ala Phe Cys Pro
 340 345 350
 His Cys Asp Gly Pro Phe Tyr Lys Gly Lys Gln Val Ala Val Val Gly
 355 360 365
 Gly Gly Asn Ser Gly Ile Glu Ala Ala Ile Asp Leu Ala Gly Ile Cys

370 375 380
 Ser Lys Val Thr Val Leu Glu Phe Met Asp Glu Leu Lys Ala Asp Gln
 385 390 395 400
 Val Leu Gln Glu Lys Leu Lys Ser Leu Pro Asn Val Glu Val Leu Val
 405 410 415
 His Ser Gln Thr Thr Glu Val Val Gly Asn Gly Asp Lys Val Thr Gly
 420 425 430
 Ile Arg Val Lys Asp Arg Lys Thr Glu Glu Glu Arg Val Ile Ser Leu
 435 440 445
 Asp Gly Ile Phe Val Gln Ile Gly Leu Val Ala Asn Ser Gly Ile Phe
 450 455 460
 Arg Asp Val Val Glu Val Asn Arg Pro Gly Glu Ile Val Ile Asp Ala
 465 470 475 480
 His Cys Arg Thr Asn Val Pro Gly Ile Tyr Ala Ala Gly Asp Val Ser
 485 490 495
 Thr Val Pro Tyr Lys Gln Ile Ile Ile Ala Met Gly Glu Gly Ala Lys
 500 505 510
 Ala Ala Leu Ala Ala Phe Glu Asp Arg Met Arg Gly Glu Ile
 515 520 525

<210> 9189

<211> 282

<212> PRT

<213> B.fragilis

<400> 9189

Ile Leu Asn Leu Glu Thr Thr Ile Leu Leu Thr Ile Lys Thr His Lys
 1 5 10 15
 Met Lys Lys Arg Ile Val Phe Ile Ala Ala Leu Leu Cys Gly Met Cys
 20 25 30
 Phe Thr Thr Ala Ser Ala Gln Phe Lys Ile Gly Gly Lys Lys Ile Asn
 35 40 45
 Val Gly Lys Val Val Gln Ala Gly Ser Asp Ala Ala Lys Ala Ile Thr
 50 55 60
 Leu Ser Asp Ser Asp Ile Ala Ala Met Ser Lys Glu Tyr Met Gln Trp
 65 70 75 80
 Met Asp Thr His Asn Pro Leu Thr Ala Ala Asp Ser Glu Tyr Gly Lys
 85 90 95
 Arg Leu Glu Lys Leu Thr Gly His Ile Lys Glu Val Asp Gly Leu Lys
 100 105 110
 Val Asn Phe Gly Val Tyr Glu Val Val Asp Val Asn Ala Phe Ala Cys
 115 120 125
 Gly Asp Gly Ser Val Arg Ile Cys Ala Gly Leu Met Asp Ile Met Thr
 130 135 140
 Asp Asp Glu Val Met Ala Val Val Gly His Glu Ile Gly His Val Ile
 145 150 155 160
 His Thr Asp Ser Lys Asp Ala Met Lys Ser Ala Tyr Leu Arg Ser Ala
 165 170 175
 Val Lys Asn Ala Ala Gly Ala Ala Ser Ser Thr Val Ser Lys Leu Thr
 180 185 190
 Asp Ser Glu Leu Gly Ala Met Ala Glu Ala Leu Ala Gly Ala Gln Tyr
 195 200 205
 Ser Gln Lys Gln Glu Ser Glu Ala Asp Asp Tyr Gly Phe Glu Phe Ser
 210 215 220
 Ile Lys His Asn Ile Asp Pro Tyr Ala Met Tyr Asn Ala Leu Asn Lys
 225 230 235 240
 Leu Leu Glu Leu Ser Ala Glu Ala Pro Lys Glu Ser Lys Phe Gln Lys
 245 250 255
 Met Phe Ser Ser His Pro Asp Thr Ala Lys Arg Val Ala Arg Ala Lys

260 265 270
 Glu Lys Ala Asp Asn Tyr Thr Lys Asn Lys
 275 280

<210> 9190
 <211> 874
 <212> PRT
 <213> B.fragilis

<400> 9190

Asp Arg Thr His Asn Gly Lys Thr Asn Leu Pro Ser Asn Pro Arg Tyr
 1 5 10 15
 Glu Met Lys Thr Pro Lys Ile Leu Lys Val His Leu Leu Leu Tyr Leu
 20 25 30
 Phe Cys Leu Ser Val Ser Ala Gln Thr Thr Asp Ser Ile Val Gln Lys
 35 40 45
 Leu Ser Gln Tyr Ala Tyr Leu Ile Asp Asn Phe Ser Lys Tyr Ile Pro
 50 55 60
 Gln Glu Lys Val Tyr Met Gln Phe Asp Asn Thr Ser Tyr Tyr Gln Gly
 65 70 75 80
 Asp Asn Ile Trp Phe Lys Cys Phe Leu Val Thr Ser Asp Leu His Pro
 85 90 95
 Ala Thr Asp Leu Ser Lys Thr Leu Tyr Val Glu Leu Leu Asn Pro Gly
 100 105 110
 Gly Glu Val Ile Asp Lys Arg Thr Leu Lys Ile Glu Asn Gly Gln Cys
 115 120 125
 His Gly Asp Phe Thr Leu Gly Gln Leu Pro Phe Tyr Ser Gly Phe Tyr
 130 135 140
 Glu Ile Arg Ala Tyr Thr Lys Tyr Met Leu Asn Phe Gly Gly Asp Ile
 145 150 155 160
 Ile Phe Ser Arg Leu Leu Pro Val Phe Asp Lys Pro Lys Ala Glu Gly
 165 170 175
 Asp Phe Thr Glu Lys Glu Met Arg Lys Tyr Ala Thr Gly Asn Tyr Pro
 180 185 190
 Leu Glu Arg Pro Lys Pro Thr Lys Ser Lys Lys Val Asn Leu Lys Phe
 195 200 205
 Phe Pro Glu Gly Gly Asn Leu Val Arg Gly Ile Glu Ser Glu Val Ala
 210 215 220
 Phe Glu Ala Thr Asp Thr Tyr Gly Asn Pro Ile Thr Leu Thr Gly Ile
 225 230 235 240
 Val Ile Asn Glu Glu Lys Gln Glu Thr Ala Arg Phe Asn Val Thr His
 245 250 255
 Asp Gly Arg Gly Ile Phe Asn Tyr Thr Pro Thr Gly Glu Lys Gln Lys
 260 265 270
 Ala Ile Val Glu Phe Asn Gly Lys Lys His Gln Phe Asn Met Pro Glu
 275 280 285
 Ala Leu Pro Glu Gly Tyr Thr Leu His Ala Asp Asn Leu Ser Tyr Thr
 290 295 300
 Asp Ser Ile Glu Ile Ala Val Gln Lys Asn Ser Asn Thr Pro Ser Asp
 305 310 315 320
 Val Leu Gly Leu Ala Val Ile Ser Gly Gly Lys Leu Tyr Lys Phe Cys
 325 330 335
 Leu Ile Asp Val Glu Gly Asn Glu Thr Ile Arg Phe Lys Ile Asp Lys
 340 345 350
 Ser Lys Leu Val Pro Gly Val Ser Arg Ile Ala Leu Phe Asn Ser Asn
 355 360 365
 Gly Glu Val Leu Ser Asp Arg Leu Ile Phe Thr Tyr Pro Lys Glu Gln
 370 375 380
 Leu Ser Val Gln Val Gln Ala Asp Lys Glu Thr Tyr Asp Pro Tyr Glu

385 390 395 400
 Leu Val Asn Leu Glu Phe Thr Leu Thr Gly Lys Glu Lys Ile Pro Val
 405 410 415
 Gln Thr Pro Phe Ala Leu Ser Val Arg Asp Gly Met Asn Glu Val Glu
 420 425 430
 Ser Gly His Asn Met Leu Thr Asp Leu Leu Leu Met Ser Glu Ile Lys
 435 440 445
 Gly Tyr Val Asn Asn Pro Gln Tyr Tyr Phe Glu Ser Arg Asp Asp Thr
 450 455 460
 Arg Arg Lys Ala Ile Asp Leu Leu Leu Arg Val Gln Gly Trp Arg Arg
 465 470 475 480
 Tyr Ser Trp Lys Gln Met Thr Gly Ile Glu Ser Leu Asp Leu Lys Tyr
 485 490 495
 Gly Pro Glu Gln Gly Ile Glu Thr Arg Gly Gln Val Val Ser Phe Val
 500 505 510
 Arg Gln Leu Pro Lys Pro Asn Val Glu Val Ser Cys Phe Leu Lys Lys
 515 520 525
 Arg Gly Glu Asn Glu Glu Asn Ser Ser Phe Ile Glu Ala Ile Thr Thr
 530 535 540
 Asp Ser Leu Gly His Phe Ser Leu Ile Ser Asp Ile Tyr Gly Lys Trp
 545 550 555 560
 Asp Leu Ile Leu Ala Val Thr Val Asn Arg Lys Lys Lys Asp Tyr Arg
 565 570 575
 Ile Leu Leu Asp Arg Leu Phe Ser Pro Ala Pro Arg Lys Tyr His Tyr
 580 585 590
 Ala Asp Met Gln Val Ser Ile Ala Asn Ala Glu Lys Glu Lys Glu Leu
 595 600 605
 Met Pro Glu Val Glu Thr Thr Pro Leu Pro Glu Glu Asp Ile Glu Ala
 610 615 620
 Phe Phe Ala Ala Tyr Ala Asp Ser Leu Ala Lys Ala Asp Asn His Glu
 625 630 635 640
 Lys Asn Tyr Arg Leu Lys Glu Val Thr Ile Lys Ala Lys Lys Arg Thr
 645 650 655
 Lys Glu Lys Glu Ile Tyr Glu Ser Arg Ser Lys Ser Ile Ala Tyr Tyr
 660 665 670
 Asp Val His Ser Glu Leu Asp Asp Ile Lys Asp Ser Gly Lys Phe Ile
 675 680 685
 Gly Asp Asp Ile His Glu Leu Met Met Asn Met Asn Lys Asn Phe Ser
 690 695 700
 Pro Val Ser Gly Arg Asn Tyr Leu Tyr Tyr Lys Ser Lys Met Pro Leu
 705 710 715 720
 Phe Val Ile Asn Tyr Glu Arg Thr Arg His Thr Glu Met Asp Tyr Asn
 725 730 735
 Lys Tyr Lys Tyr Ile Arg Leu Glu Ala Ile Lys Ser Ile Tyr Ile Thr
 740 745 750
 Glu Asn Leu Ser Thr Ile Cys Gln Tyr Ala Asp Pro Arg Leu Thr Pro
 755 760 765
 Phe Asp Val Ser Asp Leu Tyr Ser Cys Ala Val Leu Ile Glu Thr Tyr
 770 775 780
 Pro Glu Gly Lys Ile Pro Thr Glu Ala Gly Lys Gly Val Arg Lys Thr
 785 790 795 800
 Trp Leu Asp Gly Tyr Ser Gln Val Lys Glu Phe Tyr His Pro Asn Tyr
 805 810 815
 Ser Val Leu Pro Pro Val Pro Asp Tyr Arg Arg Thr Leu Tyr Trp Asn
 820 825 830
 Pro Ser Val Thr Pro Asn Lys Glu Gly Lys Ala His Ile Arg Phe Tyr
 835 840 845
 Asn Asn Ser Arg Cys Arg Lys Leu Lys Ile Ser Ala Glu Thr Ile Thr
 850 855 860

Thr Asn Gly Leu Ile Gly Thr Tyr Gly Asn
865 870

<210> 9191
<211> 95
<212> PRT
<213> B.fragilis

<400> 9191
Leu Ala Cys His Arg Ser Gln Glu His Asn Asn Asn Gln Ile Thr Phe
1 5 10 15
Ala Gly Cys Thr Asp Gly Gln Lys Asp Tyr Thr Leu Ile Leu Tyr Tyr
20 25 30
Glu Ile Asn Arg Ile Val Cys Cys Met Leu Phe Val Ile Ser Cys Leu
35 40 45
Gly Lys Ser Gln Pro Lys Gln Gln Ser Ala Asp Leu Tyr Arg Leu Pro
50 55 60
Leu Cys Asn Glu Cys Val Lys Asn Glu Ile Tyr Cys Ala Leu Thr Leu
65 70 75 80
Met Gly Ser Val Glu Val Asp Asp Leu Asn Glu Asn Thr Asn Lys
85 90 95

<210> 9192
<211> 64
<212> PRT
<213> B.fragilis

<400> 9192
Ser Ile Cys Leu Tyr Thr Gln Thr Tyr Tyr Phe Leu Ser Asn Ile Ile
1 5 10 15
Leu Gly Tyr Val Tyr Glu Ile Phe Leu Phe Gln Asn Asn Leu Tyr Phe
20 25 30
Cys Leu Tyr Arg Leu Leu Tyr Leu His Tyr Ile Leu Ile Ser Thr Phe
35 40 45
Phe Asp Phe Leu Glu Leu Ile Phe Ile Cys Ile Phe Asp Leu Tyr Ile
50 55 60

<210> 9193
<211> 322
<212> PRT
<213> B.fragilis

<400> 9193
Thr Tyr Arg Leu Met Asp Ile Gln Thr Ala Lys Gln Ile Lys Ile Ala
1 5 10 15
Asp Tyr Leu His Ser Leu Gly Phe Ser Pro Val Lys Gln Gln Gly Ile
20 25 30
Asn Leu Trp Tyr Lys Ser Pro Leu Arg Glu Glu Thr Glu Ala Ser Phe
35 40 45
Lys Val Asn Thr Glu Arg Asn Gln Trp Tyr Asp Phe Ala Leu Gly Lys
50 55 60
Gly Gly Asn Ile Ile Ala Leu Ala Gln Glu Leu Tyr Cys Ser Asp His
65 70 75 80
Val Pro Tyr Leu Leu Gln Lys Ile Glu Glu Gln Thr Pro Arg Ile Arg
85 90 95
Pro Val Ser Phe Ser Phe Gly Lys Gln Ser Ser Ser Glu Pro Ser Phe
100 105 110
Gln Gln Leu Glu Ile Val Pro Leu Ser Ser Pro Ala Leu Leu Ala Tyr
115 120 125

Leu Gln Glu Arg Gly Ile Asn Ile Ala Met Ala Lys Arg Glu Cys Ser
 130 135 140
 Glu Ala His Phe Thr His Asn Gly Lys Arg Tyr Phe Ala Ile Ala Phe
 145 150 155 160
 Pro Asn Val Ser Gly Gly Tyr Glu Ile Arg Asn Gln Tyr Phe Lys Gly
 165 170 175
 Cys Ile Ala Pro Lys Glu Ile Ser His Ile Lys Gln Pro Gly Thr Ala
 180 185 190
 Arg Glu Thr Cys Tyr Val Phe Glu Gly Phe Met Asp Tyr Leu Ser Phe
 195 200 205
 Leu Thr Leu Arg Leu Glu Asn Cys Pro Lys Tyr Pro Glu Leu Asp Arg
 210 215 220
 Gln Asp Tyr Met Val Leu Asn Ser Val Ala Asn Val Ser Lys Ala Ile
 225 230 235 240
 Tyr Pro Leu Gly Ser Tyr Glu Arg Ile His Cys Phe Phe Asp Asn Asp
 245 250 255
 Arg Ala Gly Met Glu Ala Met Gln Gln Ile Tyr Lys Glu Tyr Gly Arg
 260 265 270
 Asp Leu Tyr Ile Arg Asp Ala Ser Gln Thr Tyr Ser Gly Cys Lys Asp
 275 280 285
 Leu Asn Glu Tyr Leu Gln Lys Gln Thr Glu Arg Asn Arg Gln Val Gln
 290 295 300
 Ser Ala Lys Gly Val Arg Ser Gln Pro Pro Lys Lys Lys Asn Gly Phe
 305 310 315 320
 Arg Leu

<210> 9194
 <211> 106
 <212> PRT
 <213> B.fragilis

<400> 9194
 Gln Lys Leu His Asn Tyr Gln Asn Ile Arg Gln Ile Lys Glu Asn Lys
 1 5 10 15
 Thr Ile Gly Ser Gly Asp Phe Gln Tyr Ile Lys Asn Ala Cys Lys Leu
 20 25 30
 Leu Thr Tyr Arg Arg Leu His His Leu Ala Glu Arg Gln Gly Phe Glu
 35 40 45
 Pro Arg Val Pro Arg Ser Thr Val Phe Lys Thr Ala Ala Ile Asp
 50 55 60
 His Ser Ala Thr Ser Pro Glu Leu Arg Leu Ser Ser Ala Phe Leu Leu
 65 70 75 80
 Lys Arg Cys Lys Gly Thr Asn His Phe Leu Thr Cys Lys Leu Phe Arg
 85 90 95
 Lys Lys Ile Leu Glu Lys Tyr Ile Trp Lys
 100 105

<210> 9195
 <211> 186
 <212> PRT
 <213> B.fragilis

<400> 9195
 Glu Lys Arg Gln Lys Met Lys Ile Ala Gln Gln Leu Lys Glu Lys Asn
 1 5 10 15
 Ile Ala Glu Tyr Leu Ile Tyr Met Trp Gln Ile Glu Asp Leu Ile Arg
 20 25 30
 Ala Asn Asp Cys Asp Val Asp Arg Ile Glu Glu Asn Ile Val Ser Arg

35 40 45
 Tyr Gln Val Ser Asp Glu Glu Arg Arg Glu Leu Thr Glu Trp Tyr Ala
 50 55 60
 Asn Leu Ala Ser Met Met Arg Glu Glu Gly Val Arg Glu Lys Gly His
 65 70 75 80
 Leu Gln Ile Asn Arg Asn Val Ile Ile Asn Leu Thr Glu Leu His Ala
 85 90 95
 Ala Leu Leu Ala Ser Pro Lys Phe Pro Phe Tyr Ser Ser Ala Tyr Phe
 100 105 110
 Lys Ala Leu Pro Phe Ile Val Glu Leu Arg Asn Lys Asn Gly Gln Lys
 115 120 125
 Glu Glu Pro Glu Leu Glu Thr Cys Phe Glu Ala Leu Tyr Gly Met Met
 130 135 140
 Leu Leu Arg Leu Gln Lys Lys Pro Val Ser Pro Glu Thr Thr Lys Ala
 145 150 155 160
 Met Glu Ala Ile Ser Ser Phe Leu Ser Met Leu Ala Asn Tyr Tyr Asp
 165 170 175
 Lys Asp Arg Lys Gly Glu Leu Lys Leu Glu
 180 185

<210> 9196

<211> 72

<212> PRT

<213> B.fragilis

<400> 9196

Val Ser Met Gln Phe Lys Glu Gln Lys Leu Phe Phe Asn Thr His Thr
 1 5 10 15
 Asn Ser Val Asn Leu Leu Thr Lys Glu Lys Tyr Glu Asn Leu Leu Ile
 20 25 30
 Phe Arg Ile Ser Ala Asn Arg Thr Leu Arg Leu Pro Ile Arg Phe Val
 35 40 45
 Ile Val Gly Ser Phe Arg Tyr His Gln Asn Tyr Thr Thr Phe Ile Lys
 50 55 60
 Lys Ala Thr Thr Lys Ser Ile Phe
 65 70

<210> 9197

<211> 83

<212> PRT

<213> B.fragilis

<400> 9197

Val Pro Glu Gln Gln Lys Val Ala Gln Asp Phe Ala Met Ser Glu Phe
 1 5 10 15
 Ser Leu Ile Leu Val Leu Gln Lys Glu Asn Lys Gln Asn Ser Asn Met
 20 25 30
 Thr Trp Gln Lys Tyr Lys Leu Asn Leu Arg Asn Ser His Leu Leu Glu
 35 40 45
 Glu Phe Phe Gln Ser Trp Arg Asn Leu Thr Pro Cys Phe His Pro Leu
 50 55 60
 Ser Thr Gln His Trp Val Arg Asp Ala Ala Val Ser Ser Asp Ile Ser
 65 70 75 80
 Ser Ala Arg

<210> 9198

<211> 65

<212> PRT

<213> B.fragilis

<400> 9198

Lys Ser Arg Gln Tyr Thr Asp Phe Arg Lys Ile Lys Asp Lys Val Asn
 1 5 10 15
 Tyr Pro Val Tyr Arg Gly Lys Cys Lys Leu Gln Met Leu Asp Ile Gln
 20 25 30
 Leu Asp Ile Ala Glu Asp Arg Phe Pro Val Ser Pro Leu Lys Thr Lys
 35 40 45
 Lys Gln Ser Tyr Lys Ser Leu Asn Phe Asn Asn Ser Arg Thr Phe Phe
 50 55 60
 Phe
 65

<210> 9199

<211> 310

<212> PRT

<213> B.fragilis

<400> 9199

Arg Lys Phe Lys Lys Met Asp Ile Ala Ala Leu Leu Ser Gly Gly Val
 1 5 10 15
 Asp Ser Ser Val Val Val His Leu Leu Cys Glu Gln Gly Tyr Lys Pro
 20 25 30
 Thr Leu Phe Tyr Ile Lys Ile Gly Met Asp Gly Ala Glu Tyr Met Asp
 35 40 45
 Cys Ser Ala Glu Glu Asp Ile Glu Leu Ser Thr Ala Ile Ala Arg Arg
 50 55 60
 Tyr Gly Leu Ala Leu Glu Val Val Asp Leu His Arg Glu Tyr Trp Asp
 65 70 75 80
 Asn Val Ala Ala Tyr Ala Ile Glu Lys Ile Arg Lys Gly Gln Thr Pro
 85 90 95
 Asn Pro Asp Val Met Cys Asn Lys Leu Ile Lys Phe Gly Cys Phe Glu
 100 105 110
 Gln Gln Val Gly Lys Asp Phe Asp Leu Thr Ala Thr Gly His Tyr Ala
 115 120 125
 Thr Thr Leu Gln Leu Gly Gly Lys Thr Trp Leu Gly Thr Ala Lys Asp
 130 135 140
 Pro Ile Lys Asp Gln Thr Asp Phe Leu Ala Gln Ile Asp Tyr Leu Gln
 145 150 155 160
 Val Ser Lys Leu Leu Phe Pro Ile Gly Gly Leu Met Lys His Glu Val
 165 170 175
 Arg Glu Ile Ala Leu Gln Ala Gly Leu Pro Ser Ala Cys Arg Lys Asp
 180 185 190
 Ser Gln Gly Ile Cys Phe Leu Gly Lys Ile Asn Tyr Asn Asp Phe Val
 195 200 205
 Arg Arg Phe Leu Gly Glu Lys Glu Gly Ala Val Ile Glu Phe Glu Thr
 210 215 220
 Gly Lys Lys Ile Gly Thr His Arg Gly Tyr Trp Phe His Thr Ile Gly
 225 230 235 240
 Gln Arg Lys Gly Leu Gly Leu Gly Gly Gly Pro Trp Phe Val Val Lys
 245 250 255
 Lys Asp Ile Gln Asp Asn Ile Ile Tyr Val Ser His Gly Tyr Asp Ala
 260 265 270
 Glu Gln Gln Tyr Gly Tyr Glu Phe Arg Met Lys Asp Ser Asn Phe Ile
 275 280 285
 Thr Asp Asn Pro Arg Glu Gly Ser Thr Val Glu Glu Asp Ala Leu Ile
 290 295 300
 Glu Tyr Pro Leu Tyr Thr

305

310

<210> 9200
 <211> 358
 <212> PRT
 <213> B.fragilis

<400> 9200

Ser Leu His Asn Asp Ile Val Phe Phe Glu Leu Ile Leu Tyr Phe Phe
 1 5 10 15
 Phe Leu Ser Gly Thr Lys Ile Arg His Lys Met Ile Arg Val Lys Leu
 20 25 30
 Lys Ile Ser Ile Phe Ala Leu Ile Asp Ser Ile Ser Leu Ile Asn Gln
 35 40 45
 Arg Thr Met Thr Ile Gln Gln Leu Glu Tyr Ile Leu Ala Val Asp Gln
 50 55 60
 Phe Arg His Phe Ala Lys Ala Ala Glu Tyr Cys Arg Val Thr Gln Pro
 65 70 75 80
 Thr Leu Ser Ala Met Ile Gln Lys Leu Glu Asp Glu Leu Gly Val Lys
 85 90 95
 Leu Phe Asp Arg Ser Met Thr Pro Val Cys Pro Thr Ala Ile Gly Lys
 100 105 110
 Lys Val Leu Glu Gln Ala Arg Lys Ile Leu Ser Glu Val Ile Cys Val
 115 120 125
 Lys Glu Ile Ile Ser Glu Glu Gln His Ser Leu Ser Gly Thr Phe Arg
 130 135 140
 Leu Ala Val Leu Pro Thr Ile Ala Pro Tyr Leu Leu Pro Arg Phe Phe
 145 150 155 160
 Pro Gln Leu Met Glu Lys Tyr Pro Asp Leu Asp Ile Arg Val Met Glu
 165 170 175
 Met Lys Thr Pro Asp Ile Arg Lys Ala Leu Leu Thr Gly Glu Ala Asp
 180 185 190
 Ala Ala Ile Ile Ala Ser Met Leu Asp Asp Ala Ala Leu Thr Glu Glu
 195 200 205
 Thr Leu Phe Tyr Glu Gln Phe Leu Gly Tyr Val Ser Lys Lys Glu Pro
 210 215 220
 Leu Phe Lys His Asp Val Ile Arg Thr Ser Asp Val Thr Gly Glu Arg
 225 230 235 240
 Leu Trp Leu Leu Asp Glu Gly His Cys Phe Arg Asp Gln Leu Val Arg
 245 250 255
 Phe Cys Gln Met Glu Ala Val Lys Ile Ser Gln Met Ala Tyr Arg Leu
 260 265 270
 Gly Ser Met Glu Thr Phe Met His Met Val Glu Ser Gly Lys Gly Ile
 275 280 285
 Thr Phe Ile Pro Glu Leu Ala Val Met Gln Leu Ser Glu Glu Gln Lys
 290 295 300
 Glu Leu Val Arg Pro Phe Ala Ile Pro Arg Pro Thr Arg Gln Ile Val
 305 310 315 320
 Leu Val Thr Arg Lys Asp Phe Ile Arg Thr Ser Leu Leu Gln Val Leu
 325 330 335
 Lys Glu Glu Ile Gln Ala Ala Val Pro Lys Glu Met Leu Thr Leu Gln
 340 345 350
 Ala Val Gln Cys Leu Val
 355

<210> 9201
 <211> 308
 <212> PRT
 <213> B.fragilis

<400> 9201

Leu Met Asn Lys Lys Pro Ile Ser Pro Val Cys Trp Val Pro Thr Val
 1 5 10 15
 Tyr Phe Ala Met Gly Leu Pro Phe Val Ala Leu Ser Met Val Ser Val
 20 25 30
 Leu Met Phe Ser Asp Met Glu Val Ser Asn Ala Gln Ile Ala Phe Trp
 35 40 45
 Thr Ser Leu Ile Met Leu Pro Trp Thr Leu Lys Pro Leu Trp Ser Pro
 50 55 60
 Phe Leu Glu Met Phe Lys Thr Lys Lys Tyr Phe Val Val Ala Thr Glu
 65 70 75 80
 Ile Ile Thr Gly Leu Ala Phe Ala Leu Val Ala Leu Ser Leu Pro Leu
 85 90 95
 Pro Asp Phe Phe Arg Tyr Ala Ile Ala Leu Met Gly Ile Ile Ala Leu
 100 105 110
 Ser Gly Ala Thr His Asp Ile Ala Gly Asp Gly Val Tyr Leu Thr Glu
 115 120 125
 Leu Thr Ala Thr Gln Gln Ala Lys Tyr Ile Gly Trp Gln Gly Ala Phe
 130 135 140
 Tyr Asn Leu Ala Lys Ile Leu Ala Asn Gly Gly Leu Val Trp Leu Ala
 145 150 155 160
 Gly Met Leu Lys Asp Glu Phe Gly Val Val His Ala Trp Met Ile Val
 165 170 175
 Met Leu Met Cys Ala Gly Ile Met Ile Leu Ile Gly Leu Tyr His Ile
 180 185 190
 Arg Ile Leu Pro Ser Gly Gly Gly Ala Ser Gly Glu Val Asn Thr Met
 195 200 205
 Ser Asp Ala Leu Asn Met Leu Trp Glu Val Ile Arg Ser Phe Phe Gln
 210 215 220
 Lys Lys His Ile Ala Phe Tyr His Ala Phe Ile Ile Trp Tyr Pro Val
 225 230 235 240
 Ala Gln Gly Ile Cys His Gln Asp Gly Thr Val Val Pro Glu Asn Val
 245 250 255
 Gly Cys Arg Met Gly Ile Gly Thr Gln His Ser Gly Tyr Arg Thr Gly
 260 265 270
 Ile Trp Tyr Val Arg Ser Gly Ser Phe Tyr Ser Arg Phe Ala Phe Gly
 275 280 285
 Arg Leu Leu His Phe Gly Phe Arg Thr Ser Glu Asp Phe Val Phe Phe
 290 295 300
 Met Leu Arg Phe
 305

<210> 9202

<211> 165

<212> PRT

<213> B.fragilis

<400> 9202

Leu Phe Asp Asn Leu Lys Lys Glu Arg Thr Met Lys Arg Ile Ser Phe
 1 5 10 15
 Leu Leu Ala Ala Leu Leu Met Met Gly Gly Met Val Met Ala Gln Gly
 20 25 30
 Pro Arg Arg Gly Gly Gln Asp Met Asp Pro Lys Thr Arg Ala Glu Arg
 35 40 45
 Met Thr Glu Arg Met Ala Lys Glu Tyr Ser Leu Asn Glu Thr Gln Lys
 50 55 60
 Lys Glu Leu Leu Glu Val Asn Met Ala Phe Val Gln Lys Met Gly Glu
 65 70 75 80

Arg Pro Gly Arg Met Lys Pro Glu Met Arg Gln Gly Lys Lys Gly Gln
 85 90 95
 Ser Gln Ala Thr Asp Ser Cys Thr Cys Lys Gln Asp Arg Arg Lys Ala
 100 105 110
 Pro Arg Met Ser Lys Glu Asp Arg Glu Lys Met Arg Gln Glu Met Lys
 115 120 125
 Ala Ser Arg Glu Ser Tyr Glu Ala Gly Leu Lys Lys Ile Met Thr Lys
 130 135 140
 Asp Gln Tyr Ala Ala Tyr Thr Lys Lys Gln Ala Glu Arg Glu Gln Arg
 145 150 155 160
 Arg Gly Gly Gly Arg
 165

<210> 9203

<211> 532

<212> PRT

<213> B.fragilis

<400> 9203

Phe Phe Ile Leu Asn Ser Arg Asn Met Ala Asp Asn Thr Glu Ile Leu
 1 5 10 15
 Arg Arg Arg Thr Phe Ala Ile Ile Ala His Pro Asp Ala Gly Lys Thr
 20 25 30
 Ser Leu Thr Glu Lys Leu Leu Leu Phe Gly Gly Gln Ile Gln Val Ala
 35 40 45
 Gly Ala Val Lys Ser Asn Lys Ile Lys Lys Thr Ala Thr Ser Asp Trp
 50 55 60
 Met Glu Ile Glu Lys Gln Arg Gly Ile Ser Val Thr Thr Ser Val Met
 65 70 75 80
 Glu Phe Asp Tyr Arg Asp Tyr Lys Ile Asn Ile Leu Asp Thr Pro Gly
 85 90 95
 His Gln Asp Phe Ala Glu Asp Thr Tyr Arg Thr Leu Thr Ala Val Asp
 100 105 110
 Ser Val Ile Ile Val Val Asp Gly Ala Lys Gly Val Glu Thr Gln Thr
 115 120 125
 Arg Lys Leu Met Glu Val Cys Arg Met Arg Asn Thr Pro Val Ile Ile
 130 135 140
 Phe Val Asn Lys Met Asp Arg Glu Gly Lys Asp Pro Phe Asp Leu Leu
 145 150 155 160
 Asp Glu Leu Glu Glu Glu Leu Met Ile Gln Val Arg Pro Leu Ser Trp
 165 170 175
 Pro Ile Glu Gln Gly Pro Arg Phe Lys Gly Val Tyr Asn Ile Tyr Glu
 180 185 190
 Gln Lys Leu Asp Leu Tyr Gln Pro Ser Lys Gln Val Val Thr Glu Lys
 195 200 205
 Val Glu Ile Asp Ile His Ser Asp Glu Leu Asp Arg Gln Ile Gly Asp
 210 215 220
 Thr Leu Ala Asp Lys Leu Arg Gly Asp Leu Glu Leu Ile Glu Gly Val
 225 230 235 240
 Tyr Pro Glu Phe Asp Val Glu Thr Tyr Leu Gln Gly Glu Cys Ala Pro
 245 250 255
 Val Phe Phe Gly Ser Ala Leu Asn Asn Phe Gly Val Gln Glu Leu Leu
 260 265 270
 Asn Cys Phe Val Glu Ile Ala Pro Ala Pro Arg Pro Val His Ala Glu
 275 280 285
 Glu Arg Glu Val Ile Pro Glu Glu Pro Lys Phe Thr Gly Phe Ile Phe
 290 295 300
 Lys Ile Thr Ala Asn Ile Asp Pro Asn His Arg Ser Cys Val Ala Phe
 305 310 315 320

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<210> 9204
<211> 257
<212> PRT
<213> B.fragilis
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Asp	Lys	Thr	Asn	Lys	Lys	Leu	Met	Lys	Lys	Phe	Asn	Leu	Ile	Thr	Phe
1				5					10					15	
Ala	Val	Ile	Leu	Met	Leu	Leu	Pro	Ile	Leu	Gln	Ser	Cys	Leu	Asp	Asp
			20					25					30		
Ala	Asn	Asn	Asp	Glu	Trp	Val	Thr	Cys	Pro	Pro	Gly	Gly	Ile	Leu	Ala
		35					40					45			
Ile	Gly	Thr	Met	Lys	Ile	Pro	Asn	Ala	Asp	Thr	Pro	Arg	Asp	Phe	Phe
	50					55					60				
Ile	Ala	Leu	Asp	Asn	Gly	Asp	Asn	Val	Leu	Pro	Ala	Asp	Thr	Ala	Asp
65					70					75					80
Ile	Arg	Asn	Arg	Lys	Tyr	Thr	Val	Ala	Glu	Gly	Gln	Arg	Val	Phe	Val
				85					90					95	
Gly	Tyr	Leu	Gln	Met	Gly	Glu	Glu	Lys	Pro	Gly	Tyr	Glu	Asn	Gly	Lys
			100					105					110		
Ile	Phe	Thr	Ile	Glu	Asp	Ile	Leu	Thr	Lys	Glu	Ile	Ile	Pro	Leu	Thr
		115					120					125			
Glu	Ala	Thr	Ala	Asp	Ser	Ile	Gly	Asp	Asp	Arg	Ile	Asn	Val	Thr	Ala
	130					135					140				
His	Ala	Leu	Thr	Lys	Asp	Tyr	Leu	Thr	Ile	Glu	Tyr	Gln	Tyr	Leu	Gly
145					150					155					160
Ser	Met	Asn	Glu	Asn	Lys	Lys	His	Met	Leu	Asn	Leu	Val	Gln	Asn	Glu
				165					170					175	
Ile	Thr	Gly	Pro	Ile	Lys	Asp	Asp	Gly	Tyr	Ile	Tyr	Leu	Glu	Phe	Arg
			180					185					190		

His Asn Ala Phe Asn Asp Ser Pro Asn Gln Leu Gly Ser Ser Leu Val
 195 200 205
 Ser Phe Lys Leu Asp Ser Ile Ala Glu Gln Leu Ala Thr Ala Lys Gly
 210 215 220
 Ile Lys Leu Arg Val Asn Thr Ile Tyr Asp Asn Ile Gln Tyr Val Thr
 225 230 235 240
 Ile Asp Ile Asn Glu Asp Lys Asn Leu Lys Ile Lys Ser Phe His Ser
 245 250 255
 Gln

<210> 9205
 <211> 417
 <212> PRT
 <213> B.fragilis

<400> 9205

Asp Phe Ser Lys Leu Leu Asn Phe Lys Asp Met Asn Leu Val Glu Arg
 1 5 10 15
 Phe Leu Lys Tyr Val Ser Phe Asp Thr Gln Ser Asp Glu Leu Thr Arg
 20 25 30
 Leu Thr Pro Ser Thr Pro Gly Gln Met Val Phe Ala Glu Tyr Leu Lys
 35 40 45
 Ser Glu Leu Glu Ser Leu Gly Leu Glu Asp Ile Thr Leu Asp Glu Asn
 50 55 60
 Gly Tyr Leu Phe Ala Thr Leu Pro Ala Asn Thr Glu Lys Glu Leu Pro
 65 70 75 80
 Val Ile Gly Phe Ile Ala His Met Asp Thr Ser Pro Asp Met Ser Gly
 85 90 95
 Lys Asn Val Thr Pro Arg Ile Val Glu Lys Tyr Asp Gly Ser Asp Ile
 100 105 110
 Val Leu Cys Val Glu Glu Asn Ile Val Leu Ser Pro Ser Gln Phe Pro
 115 120 125
 Glu Leu Leu Asp His Lys Gly Glu Asp Leu Ile Val Thr Asn Gly Lys
 130 135 140
 Thr Leu Leu Gly Ala Asp Lys Ala Gly Ile Ala Glu Ile Val Ser
 145 150 155 160
 Ala Val Val Tyr Leu Gln Glu His Pro Glu Ile Lys His Gly Lys Ile
 165 170 175
 Arg Ile Gly Phe Asn Pro Asp Glu Glu Ile Gly Glu Gly Ala His Lys
 180 185 190
 Phe Asp Val Gln Lys Phe Gly Cys Glu Trp Ala Tyr Thr Met Asp Gly
 195 200 205
 Gly Glu Val Gly Glu Leu Glu Phe Glu Asn Phe Asn Ala Ala Ala Ala
 210 215 220
 Lys Ile Thr Phe Lys Gly Arg Asn Val His Pro Gly Tyr Ala Lys His
 225 230 235 240
 Lys Met Ile Asn Ser Ile Arg Ile Ala Asn Gln Phe Ile Thr Met Leu
 245 250 255
 Pro Arg His Glu Thr Pro Glu His Thr Ser Gly Tyr Glu Gly Phe Tyr
 260 265 270
 His Leu Ile Gly Ile Gln Gly Asp Val Glu Gln Ser Thr Val Ser Tyr
 275 280 285
 Ile Ile Arg Asp His Asp Arg Asn Lys Phe Glu Asp Arg Lys Lys Glu
 290 295 300
 Ile Glu His Leu Val Asn Lys Ile Asn Ala Glu Phe Gly Glu Gly Thr
 305 310 315 320
 Ala Thr Leu Glu Leu Arg Asp Gln Tyr Tyr Asn Met Arg Glu Lys Ile
 325 330 335

Glu Pro Val Met His Ile Ile Asp Thr Ala Phe Ala Ala Met Glu Ala
 340 345 350
 Val Gly Val Lys Pro Asn Val Lys Pro Ile Arg Gly Gly Thr Asp Gly
 355 360 365
 Ala Gln Leu Ser Phe Lys Gly Leu Pro Cys Pro Asn Ile Phe Ala Gly
 370 375 380
 Gly Leu Asn Phe His Gly Arg Tyr Glu Phe Val Pro Ile Gln Asn Met
 385 390 395 400
 Glu Lys Ala Met Lys Val Ile Val Lys Ile Ala Glu Leu Val Ala Ser
 405 410 415
 Lys

<210> 9206
 <211> 339
 <212> PRT
 <213> B.fragilis

<400> 9206

Ile Lys Leu Asn Tyr Ser Val Ala Glu Leu Arg Ile Met Phe Lys Asn
 1 5 10 15
 Arg Ser Met Lys Lys Ser Arg Arg Lys Arg Leu Val Ile Leu Cys Ile
 20 25 30
 Ala Leu Val Cys Ile Ile Val Leu Val Phe Leu Leu Phe Ser Lys Ser
 35 40 45
 Thr Ser Asn Asn Ser Thr Asn Pro Pro Leu Thr Asp Val Leu Thr Asp
 50 55 60
 Ser Ile Ser Arg Ile Val Ser Ala Cys Pro Gly Glu Ile Gly Val Ala
 65 70 75 80
 Ile Ile Ile Asn Asn Thr Asp Thr Val Lys Val Asn Asp Lys Ser Val
 85 90 95
 Tyr Pro Met Met Ser Val Phe Lys Val His Gln Ala Leu Ala Leu Cys
 100 105 110
 Asn Asp Phe Asp Asn Lys Gly Ile Ser Leu Asp Thr Leu Val Lys Ile
 115 120 125
 Asp Arg Asn Arg Leu Asp Ser Lys Thr Trp Ser Pro Met Met Lys Asp
 130 135 140
 Tyr Ser Glu Leu Val Ile Ser Leu Thr Val Arg Asp Leu Leu Arg Tyr
 145 150 155 160
 Thr Ile Ala Gln Ser Asp Asn Asn Ala Ser Asn Leu Met Phe Lys Asp
 165 170 175
 Met Val Asn Val Ala Gln Thr Asp Ser Phe Ile Ala Thr Leu Ile Pro
 180 185 190
 Arg Ser Ser Phe Gln Ile Ala Tyr Thr Glu Glu Glu Met Ser Ala Asp
 195 200 205
 His Asp Arg Ala Tyr Phe Asn Tyr Thr Ser Pro Leu Gly Ala Ala Met
 210 215 220
 Leu Met Asn Arg Leu Phe Thr Glu Ser Ile Val Ser Gly Glu Lys Gln
 225 230 235 240
 Ser Phe Ile Lys Asn Thr Leu Lys Glu Cys Val Thr Gly Thr Asp Arg
 245 250 255
 Ile Val Ala Pro Leu Leu Asp Lys Glu Arg Val Ser Ile Ala His Lys
 260 265 270
 Thr Gly Ser Gly Tyr Val Asn Glu Asn Gly Ile Leu Ala Ala His Asn
 275 280 285
 Asp Val Ala Tyr Ile Cys Leu Pro Asn Asn Val Cys Tyr Thr Leu Ala
 290 295 300
 Ile Phe Val Lys Asp Phe Lys Gly Asn Glu Ser Gln Ala Ser Gln Tyr
 305 310 315 320

Val Ala His Ile Ser Glu Val Val Tyr Ser Leu Leu Ile Gln Asn Ser
 325 330 335
 Ala Ile Pro

<210> 9207
 <211> 186
 <212> PRT
 <213> B.fragilis

<400> 9207
 Lys Ile Gln Lys Glu Pro Phe Ser Leu Phe Ile Pro Lys Ser Phe Pro
 1 5 10 15
 Phe Leu Ser Arg Tyr Leu Gln Cys Glu Ile Val Pro Lys Leu Ile Ile
 20 25 30
 Asp Thr Lys Lys Ile Thr Ile Met Lys Lys Ile Leu Ser Ile Leu Val
 35 40 45
 Leu Ala Ile Ala Ala Val Gln Phe Ala Phe Ala Gly Asp Ile Ile Thr
 50 55 60
 Lys Asp Ala Met Lys Leu Pro Leu Pro Ala Arg Asn Phe Ile Asn Arg
 65 70 75 80
 His Phe Ser Asn Pro Gln Ile Ser His Ile Lys Ile Glu Asn Glu Ile
 85 90 95
 Leu Gln Thr Lys Lys Tyr Asp Val Leu Leu Thr Asn Ala Thr Glu Ile
 100 105 110
 Asp Phe Asp Asn Arg Gly Asn Trp Ile Glu Val Asp Cys Lys Lys Ala
 115 120 125
 Ala Val Pro Ala Thr Ile Val Pro Asp Phe Val Lys Glu Tyr Met Lys
 130 135 140
 Ala Asn Gly Tyr His Ser Glu Phe Val Thr Gln Ile Glu Arg Asp Arg
 145 150 155 160
 Lys Gly Tyr Glu Val Glu Leu Asn Thr Asp Leu Ser Leu Lys Phe Thr
 165 170 175
 Lys Asp Gly Lys Phe Arg Lys Ala Glu His
 180 185

<210> 9208
 <211> 164
 <212> PRT
 <213> B.fragilis

<400> 9208
 Leu Lys Lys Asn Asn Ile Ile Met Lys Thr Leu Asn Tyr Thr His Leu
 1 5 10 15
 Glu Glu Lys Gly Ala Asn Thr Ile Val Leu Ser Leu Gln Gln Leu Leu
 20 25 30
 Ala Asp Phe Gln Ile His Tyr Ala Asn Leu Arg Gly Phe His Trp Asn
 35 40 45
 Ile Lys Gly His Gly Phe Phe Val Leu His Ser Lys Phe Glu Asp Leu
 50 55 60
 Tyr Asn Gly Ala Ala Glu Lys Val Asp Glu Ile Ala Glu Arg Ile Leu
 65 70 75 80
 Met Leu Gly Gly Thr Pro Ala Asn Lys Tyr Ser Asp Tyr Leu Lys Met
 85 90 95
 Ala Gln Ile Lys Glu Val Asp Gly Val Asn Lys Ala Asp Asp Ala Leu
 100 105 110
 Asn His Ile Leu Glu Thr Tyr Gly His Leu Ile Ala Glu Glu Arg Lys
 115 120 125
 Ile Leu Ser Leu Ala Ser Ser His Asn Asp Glu Val Thr Val Ala Met

130 135 140
 Met Ser Asp Tyr Leu Lys Glu Gln Glu Lys Met Val Trp Met Leu Thr
 145 150 155 160
 Ala Tyr Asn Gly

<210> 9209

<211> 769

<212> PRT

<213> B.fragilis

<400> 9209

Leu Thr Glu Asn Thr Asn Phe Ala Phe Asp Leu Asn Ser Ile Arg Met
 1 5 10 15
 Ser Gln Leu Pro Thr Leu Ile Ala Asp Leu Ala Leu Ile Leu Ile Cys
 20 25 30
 Ala Gly Ile Met Thr Leu Leu Phe Lys Lys Leu Lys Gln Pro Leu Val
 35 40 45
 Leu Gly Tyr Val Val Ala Gly Phe Leu Ala Ser Pro His Met Pro Tyr
 50 55 60
 Thr Pro Ser Val Met Asp Val Ala Asn Ile Lys Thr Trp Ala Asp Ile
 65 70 75 80
 Gly Val Ile Phe Leu Phe Ala Leu Gly Leu Glu Phe Ser Phe Lys
 85 90 95
 Lys Ile Val Lys Val Gly Gly Thr Ala Val Ile Ala Ala Cys Thr Ile
 100 105 110
 Ile Phe Cys Met Ile Leu Leu Gly Ile Ala Val Gly Met Gly Phe Gly
 115 120 125
 Trp Gln Arg Met Asp Ser Leu Phe Leu Gly Gly Met Ile Ala Met Ser
 130 135 140
 Ser Thr Thr Ile Ile Tyr Lys Ala Phe Asp Asp Leu Gly Leu Arg Lys
 145 150 155 160
 Lys Gln Phe Thr Gly Leu Val Leu Ser Ile Leu Ile Leu Glu Asp Ile
 165 170 175
 Leu Ala Ile Val Leu Met Val Met Leu Ser Thr Met Ala Val Ser Asn
 180 185 190
 Asn Phe Glu Gly Thr Glu Met Leu Gly Ser Ile Gly Lys Leu Leu Phe
 195 200 205
 Phe Leu Ile Leu Trp Phe Val Val Gly Ile Tyr Ala Ile Pro Glu Phe
 210 215 220
 Leu Lys Arg Cys Arg Lys Leu Met Ser Glu Glu Thr Leu Leu Ile Val
 225 230 235 240
 Ser Leu Ala Leu Cys Phe Gly Met Val Ala Ile Ala Ala Asn Thr Gly
 245 250 255
 Phe Ser Ala Ala Phe Gly Ala Phe Ile Met Gly Ser Ile Leu Ala Glu
 260 265 270
 Thr Ile Glu Ala Glu Ser Ile Asp Arg Leu Val Lys Pro Val Lys Asp
 275 280 285
 Leu Phe Gly Ala Ile Phe Phe Val Ser Val Gly Met Met Val Asp Pro
 290 295 300
 Ala Met Ile Ile Glu Tyr Ala Val Pro Ile Ile Val Ile Thr Leu Ala
 305 310 315 320
 Val Ile Leu Gly Gln Ala Phe Phe Gly Thr Met Gly Val Met Leu Ala
 325 330 335
 Gly Gln Pro Leu Lys Thr Ala Met Gln Cys Gly Phe Ser Leu Thr Gln
 340 345 350
 Ile Gly Glu Phe Ala Phe Ile Ile Ala Ser Leu Gly Leu Ser Leu His
 355 360 365
 Val Thr Ser Asp Phe Leu Tyr Pro Ile Val Val Ala Val Ser Val Ile

370 375 380
 Thr Thr Phe Leu Thr Pro Tyr Met Ile Arg Val Ala Glu Pro Ala Ser
 385 390 395 400
 Asn Phe Val Asp Arg Lys Leu Pro Glu Ser Trp Arg Arg Phe Leu Met
 405 410 415
 Arg Tyr Thr Thr Gly Thr Arg Thr Val Asn His Glu Ser Leu Trp Arg
 420 425 430
 Lys Leu Leu Phe Ala Leu Ala Arg Ile Leu Val Val Tyr Ser Ile Val
 435 440 445
 Ser Ile Ser Val Ile Thr Leu Ser Phe Arg Phe Val Val Pro Leu Leu
 450 455 460
 Arg Glu His Leu Pro Gly Ile Trp Gly Pro Leu Ala Gly Ala Val Phe
 465 470 475 480
 Thr Ile Leu Cys Ile Ser Pro Phe Leu Arg Ala Ile Met Val Lys Lys
 485 490 495
 Asn His Ser Val Glu Phe Ile Thr Leu Trp Asn Asp Asn Arg Val Asn
 500 505 510
 Arg Gly Pro Leu Val Ser Thr Val Val Phe Arg Val Ala Val Ser Val
 515 520 525
 Leu Phe Val Met Phe Val Ile Thr Arg Leu Phe Lys Ala Ser Val Gly
 530 535 540
 Leu Met Phe Gly Val Ala Leu Leu Leu Val Ile Leu Met Ile Leu Ser
 545 550 555 560
 Arg Gln Leu Lys Lys Gln Ser Ile Leu Ile Glu Arg Lys Phe Phe Gln
 565 570 575
 Asn Leu Arg Ser Arg Asp Met Arg Ala Glu Tyr Leu Gly Glu Lys Lys
 580 585 590
 Pro Ala Tyr Ala Gly Arg Leu Leu Ser Arg Asp Leu His Leu Thr Asp
 595 600 605
 Phe Glu Ile Pro Gly Glu Ser Ala Trp Ala Gly Lys Thr Leu Leu Glu
 610 615 620
 Leu Asn Leu Gly Lys Lys Tyr Gly Val His Val Val Ser Ile Leu Arg
 625 630 635 640
 Gly Lys Arg Arg Ile Asn Ile Pro Gly Gly Ser Ile Arg Leu Phe Pro
 645 650 655
 Met Asp Lys Ile Gln Val Ile Gly Thr Asp Asp Gln Leu Asn Thr Phe
 660 665 670
 Ala Glu Glu Met Ser His Val Ala Val Ile Asp Ser Gly Val Phe Glu
 675 680 685
 Lys Ser Glu Met Thr Leu Lys Gln Leu Leu Ile Asp Thr Asp Ser Ala
 690 695 700
 Phe Leu Gly Lys Thr Leu Arg Glu Ser Gly Ile Arg Asp Lys Tyr His
 705 710 715 720
 Cys Leu Ile Ala Gly Val Glu Arg Gly Gly Glu Ala Leu Met Thr Pro
 725 730 735
 Asp Val Asn Val Pro Phe Glu Glu Gly Asp Val Val Trp Val Val Gly
 740 745 750
 Glu Asn Glu Asp Val Tyr Arg Leu Ile Gly Gln Asn Cys Asp Arg Lys
 755 760 765
 Arg

<210> 9210
 <211> 301
 <212> PRT
 <213> B.fragilis

<400> 9210
 Asn Thr Met Lys Lys Leu Phe Val Leu Val Cys Leu Leu Ala Ile Gly

1 5 10 15
 Phe Cys Asn Val Ala Trp Ala Ala Lys Arg Gln Ala Lys His Val Val
 20 25 30
 Leu Ile Ala Leu Asp Gly Trp Gly Ala Tyr Ser Val Pro Lys Ala Asp
 35 40 45
 Ile Pro Asn Ile Lys Ser Leu Met Asp Glu Gly Cys Tyr Thr Leu His
 50 55 60
 Lys Arg Ser Val Phe Pro Ser Ser Ser Ala Ile Asn Trp Ala Ser Met
 65 70 75 80
 Phe Met Gly Val Gly Thr Glu Leu His Gly Tyr Thr Glu Trp Gly Ser
 85 90 95
 Arg Thr Pro Glu Ile Pro Ser Arg Val Val Asn Glu His Gly Ile Ser
 100 105 110
 Pro Thr Ile Phe Ser Val Met Arg Gln Gln Tyr Pro Glu Ala Glu Thr
 115 120 125
 Gly Cys Leu Tyr Glu Trp Glu Gly Ile Lys Tyr Leu Val Asp Thr Leu
 130 135 140
 Ala Leu Ser Tyr His Ala Gln Ala Ser Asp Tyr Asp Lys Tyr Pro Thr
 145 150 155 160
 Ala Leu Cys Glu Met Ala Glu Lys Tyr Ile Lys Asp Lys Lys Pro Ala
 165 170 175
 Met Leu Ala Val Cys Phe Asp Gln Leu Asp His Thr Gly His Ala Val
 180 185 190
 Gly His Asp Thr Pro Gly Tyr Tyr Glu Lys Leu Lys Glu Leu Asp Gly
 195 200 205
 Tyr Val Gly Arg Ile Ile Ala Ala Ile Lys Glu Ala Gly Ile Tyr Asp
 210 215 220
 Asp Thr Ile Ile Met Met Thr Ala Asp His Gly Gly Ile Lys Lys Gly
 225 230 235 240
 His Gly Gly Ile Thr Leu Gln Glu Val Glu Ile Pro Phe Ile Ile Ala
 245 250 255
 Gly Lys Asn Val Arg Lys Gly Gly Glu Phe Gln Glu Ser Met Met Gln
 260 265 270
 Phe Asp Thr Ala Ala Thr Met Gly Tyr Val Phe Gly Val Lys Gln Pro
 275 280 285
 Gln Val Trp Ile Gly Arg Pro Met Ile Gln Val Phe Lys
 290 295 300

<210> 9211

<211> 395

<212> PRT

<213> B.fragilis

<400> 9211

Ser Asn Gln Asn Asn Glu Ser Cys Cys Lys Met Thr Leu Lys Asn Leu
 1 5 10 15
 Ile Met Lys Arg Ile Thr Ile Lys Gln Tyr Leu Leu Ala Cys Phe Val
 20 25 30
 Leu Pro Met Ile Leu Ala Gly Cys Asn Asp Ala Asp Tyr Gln Val Ile
 35 40 45
 Asp Asn Ala Ile Tyr Leu Asn Glu Ala Ser Glu Asn Gly Ser Ala Lys
 50 55 60
 Val Thr Val Asp Pro Glu Asn Val Thr Thr Thr Thr Leu Thr Val Arg
 65 70 75 80
 Val Gly Gln Pro Val Thr Glu Asn Val Thr Ala Val Leu Thr Val Asp
 85 90 95
 Pro Ser Ile Leu Lys Glu Tyr Asn Glu Ala Asn Glu Thr Ser Tyr Glu
 100 105 110
 Val Leu Pro Glu Gln Tyr Phe Thr Tyr Asp Lys Glu Ile Lys Ile Ala

115 120 125
 Ala Gly Asp Val Ser Ala Ile Pro Ser Glu Phe Arg Val Lys Pro Tyr
 130 135 140
 Ser Asn Glu Asn Gly Glu Leu Tyr Ala Ile Pro Val Ser Leu Thr Glu
 145 150 155 160
 Ile Gln Gly Pro Val Ser Thr Ile Gly Leu Ser Ser Lys Phe Ile Ile
 165 170 175
 Leu Leu Asp Lys Pro Leu Ile Gln Ser Val Pro Phe Met Asn Thr Thr
 180 185 190
 Asn Ala Val Lys Pro Ala Lys Asp Glu Leu Trp Gly Val Thr Thr Asn
 195 200 205
 Glu Trp Ser Leu Glu Ala Trp Val Gln Met Asp Gly Phe Asp Ile Asn
 210 215 220
 Asn Gln Ala Ile Phe Asn Ser Gly Ser Ser Asp His Glu Val Tyr Ile
 225 230 235 240
 Arg Phe Gly Asp Ala Met Ile Pro Tyr Asn Ser Leu Gln Val Lys Thr
 245 250 255
 Leu Gly Ser Gln Val Asn Thr Val Thr Leu Phe Glu Lys Asn Lys Trp
 260 265 270
 Tyr His Leu Ala Phe Val Tyr Asn Ser Ser Gly Leu Leu Ser Ile Tyr
 275 280 285
 Ile Asn Gly Val Leu Asp Val Thr Leu Gln Thr Lys Gly Gly Pro Val
 290 295 300
 Arg Phe Asp Lys Met Asn Met Val Ser Ser Gly Ser Tyr Phe Arg Asn
 305 310 315 320
 Asn Cys Gln Met Ala Gln Val Arg Leu Trp Lys Ser Ala Ile Ser Gln
 325 330 335
 Thr Gln Ile Gln Ser Asn Met Tyr Phe Ala Val Lys Pro Ala Asp Pro
 340 345 350
 Asn Leu Ile Gly Tyr Trp Lys Met Asp Glu Gly Lys Gly Asn Ala Phe
 355 360 365
 Val Asp Cys Thr Gly His Gly Tyr Asp Leu Val Ala Gly Gly Thr Leu
 370 375 380
 Val Trp Lys Glu His Val Arg Phe Asp Lys Gln
 385 390 395

<210> 9212

<211> 246

<212> PRT

<213> B.fragilis

<400> 9212

Arg Glu Lys Lys Met Lys Lys Arg Tyr Leu Asn Ile Val Val Phe Ala
 1 5 10 15
 Leu Phe Val Ser Met Leu Trp Gly Cys Ser Asp Trp Thr Lys Pro Glu
 20 25 30
 Ala Glu Asp Phe Phe Glu Met Pro Gly Asn Asp Tyr Tyr Glu Asn Leu
 35 40 45
 Arg Ala Tyr Lys Arg Ser Glu His Ser Val Ala Phe Gly Trp Phe Gly
 50 55 60
 Gly Trp Thr Gly Val Gly Ala Ser Met Val Gly Ser Leu Met Gly Leu
 65 70 75 80
 Pro Asp Ser Val Asp Phe Val Ser Ile Trp Gly Asn Trp Lys Asn Leu
 85 90 95
 Asp Glu Ala Arg Met Leu Asp Lys Lys Lys Val Lys Glu Gln Lys Gly
 100 105 110
 Thr Arg Ala Leu Met Cys Phe Ile Val Ala Asn Val Gly Asp Gln Leu
 115 120 125
 Thr Pro Glu Glu His Lys Glu Asn Tyr Lys Glu Tyr Trp Gly Trp Lys

130 135 140
 Asp Gly Asp Gln Glu Ala Ile Asp Gly Ala Ile Arg Lys Tyr Ala Asn
 145 150 155 160
 Ala Ile Cys Asp Ser Ile Asp Lys Tyr Gly Tyr Asp Gly Phe Asp Ile
 165 170 175
 Asp Tyr Glu Pro Asn Tyr Gly Ser Pro Gly Asn Leu Ala Ser Tyr Pro
 180 185 190
 Glu Asn Met Leu Thr Phe Val Lys Ala Leu Gly Glu Arg Ile Gly Pro
 195 200 205
 Lys Ser Gly Thr Gly Arg Leu Leu Val Ile Asp Gly Glu Pro Gln Ser
 210 215 220
 Ile His Pro Glu Thr Gly Pro Tyr Phe Asp Tyr Phe Ile Val Gln Ala
 225 230 235 240
 Tyr Ser Asn Pro Cys Gly
 245

<210> 9213
 <211> 357
 <212> PRT
 <213> B.fragilis

<400> 9213

Lys Lys Lys Asn Met Lys Asn Asn Leu Leu Ser Glu Arg Leu Val Tyr
 1 5 10 15
 Asn Gly Glu Ser Gln Thr Pro Thr His Leu His Leu Cys Thr Tyr Asn
 20 25 30
 Ala Leu Val Met Gln Glu Val Ser Gly Val Asn Phe Gln Thr Val Ala
 35 40 45
 Asn Ser Leu Asn Arg Glu Gln Ile Asn Trp Leu Gln Val His Gly Leu
 50 55 60
 Gln Asn Thr Glu Val Ile Arg Glu Ile Cys Ser His Phe Glu Ile Asp
 65 70 75 80
 Phe Leu Ile Leu Gln Asp Ile Leu Asn Ala Glu His Pro Thr Lys Ile
 85 90 95
 Glu Glu His Asp Lys Tyr Thr Val Leu Ile Met Lys Leu Phe Arg Phe
 100 105 110
 Asn Asn Lys Glu Glu Lys Ser Pro Glu Asp Glu Leu Asp Glu Leu Glu
 115 120 125
 Gln Gln Gln Val Cys Ile Ile Gln Gly Ser Asn Phe Val Leu Thr Phe
 130 135 140
 Leu Glu Asn Glu Thr Asp Phe Phe Asp Asp Val Thr Ser Ala Leu His
 145 150 155 160
 Asn Asp Val Leu Lys Ile Arg Gly Arg Gln Ser Asp Tyr Leu Leu Ser
 165 170 175
 Val Leu Leu Asn Ser Ile Met Gly Asn Tyr Ile Ala Thr Val Ser Thr
 180 185 190
 Ile Asp Asp Ser Leu Glu Asp Leu Glu Glu Glu Leu Leu Thr Ile Ser
 195 200 205
 Asp Gly Asn Asp Ile Gly Ile Gln Ile Gln Ala Leu Arg Arg Gln Tyr
 210 215 220
 Met Leu Met Lys Lys Ala Ile Leu Pro Leu Lys Glu Gln Tyr Val Lys
 225 230 235 240
 Leu Leu Arg Ala Glu Asn Ser Leu Met His Lys Val Asn Arg Ala Phe
 245 250 255
 Phe Asn Asp Val Asn Asp His Leu Gln Phe Val Leu Gln Thr Ile Glu
 260 265 270
 Ile Cys Arg Glu Thr Leu Ser Ser Leu Val Asp Leu Tyr Ile Ser Asn
 275 280 285
 Asn Asp Leu Arg Met Asn Asp Ile Met Lys Arg Leu Thr Ile Val Ser

290 295 300
 Thr Ile Phe Ile Pro Leu Thr Phe Leu Val Gly Val Trp Gly Met Asn
 305 310 315 320
 Phe Lys Ile Met Pro Glu Leu Asp Trp Arg Tyr Gly Tyr Val Tyr Ala
 325 330 335
 Trp Ile Leu Met Leu Leu Val Gly Gly Ala Val Tyr Trp Phe Phe Arg
 340 345 350
 Lys Lys Lys Trp Tyr
 355

<210> 9214
 <211> 190
 <212> PRT
 <213> B.fragilis

<400> 9214
 Ser Met Glu Asn Gly Ile Lys Lys Ile Leu Arg Asp Lys Tyr Gly Leu
 1 5 10 15
 Phe Glu Lys Asp Ile Glu Ile Leu Leu Glu Lys Phe Thr Lys Phe Ser
 20 25 30
 Val Pro Lys Arg Glu Ile Ile Leu Gln Glu Gly Gln Thr Asp His Tyr
 35 40 45
 Ile Tyr Phe Val Glu Lys Gly Ile Val Lys Ser Thr Ile Leu Arg Glu
 50 55 60
 Gly Arg Glu Phe Ile Ile Phe Phe Ala Leu Glu Asn Asp Val Pro Leu
 65 70 75 80
 Ser Ser Pro Asn Leu Thr Glu Ser Arg Gln Ser Leu Tyr Thr Leu Glu
 85 90 95
 Ala Val Asp Thr Cys Ile Leu Trp Arg Ile Ser Arg Lys Asp Leu Ala
 100 105 110
 Thr Ser Phe Lys Asp Ser Leu Asn Leu Ser Asn Trp Gly Arg Met Ile
 115 120 125
 Leu Gln Glu Trp Leu Thr Ser Ser Ala Phe Tyr Phe Ser Ser Ile His
 130 135 140
 Trp Met Ser Lys Lys Glu Gln Tyr Gln Tyr Leu Lys Glu Met Pro
 145 150 155 160
 Lys Leu Ile Gln Arg Leu Ser Met Arg Asp Leu Ser Ala Trp Leu Asp
 165 170 175
 Ile Thr Pro Gln Ser Leu Ser Arg Ile Arg Ala Asp Met His
 180 185 190

<210> 9215
 <211> 66
 <212> PRT
 <213> B.fragilis

<400> 9215
 Val Arg Trp Asn Pro Arg Thr Arg Leu Leu Glu Ile Phe Glu Ser Thr
 1 5 10 15
 Asp His Ser Ile His Ala Arg Gly Ser Thr Ser Leu Asp His Ser Phe
 20 25 30
 Leu Tyr Tyr Pro His Tyr Leu Val Ser Tyr Thr Arg Ile Leu Phe Pro
 35 40 45
 Thr Ala Phe Asn Leu Gly Cys Ser Arg Gly Val His Pro Leu Ser Val
 50 55 60
 Pro Cys
 65

<210> 9216

<211> 374
 <212> PRT
 <213> B.fragilis

<400> 9216

Thr Gly Trp Lys Glu Asn Arg Arg Thr Lys Ile Thr Gly Gly Val Leu
 1 5 10 15
 Met Asp Tyr Met Lys Asp Ile Lys Glu Ile Ser Ala Glu Glu Ala Val
 20 25 30
 Ile Leu Trp Gln Ala Ser Arg Leu Ser Lys Ile Tyr Glu Lys
 35 40 45
 Ala Pro Glu Ile Leu Lys Val Gln Gly Ser Val Ile Gly Thr Leu Gly
 50 55 60
 Asn Phe Ser Ala Ser Ile Gly Lys Ala Lys Ser Lys Lys Thr Phe Asn
 65 70 75 80
 Val Ser Ala Ile Val Ala Ala Ala Leu Lys Asn Gly Thr Val Leu Arg
 85 90 95
 Tyr Val Ala Glu Leu Pro Glu Glu Lys Arg Lys Ile Leu Tyr Val Asp
 100 105 110
 Thr Glu Gln Ser Pro Tyr His Cys Leu Lys Val Met Lys Arg Ile Leu
 115 120 125
 Arg Met Ala Gly Leu Pro Asp Asp Arg Asp Asn Glu His Leu Glu Phe
 130 135 140
 Leu Ala Leu Arg Lys Tyr Thr Pro Glu Gln Arg Ile Arg Ile Val Glu
 145 150 155 160
 Gln Ala Ile Tyr Asn Thr Pro Asp Ile Gly Leu Val Ile Ile Asp Gly
 165 170 175
 Ile Arg Asp Met Val Tyr Asp Ile Asn Ser Pro Gly Glu Ser Thr Arg
 180 185 190
 Ile Ile Ser Lys Leu Met Gln Trp Thr Asp Asp Arg Gln Ile His Ile
 195 200 205
 His Thr Ile Leu His Gln Asn Lys Gly Asp Glu Asn Ala Arg Gly His
 210 215 220
 Ile Gly Thr Glu Leu Asn Asn Lys Ala Glu Thr Val Leu Leu Val Glu
 225 230 235 240
 Lys Asp Lys Ser Asn Gly Asp Ile Ser Asn Val Ser Ala Met His Ile
 245 250 255
 Arg Ala Met Asp Phe Glu Pro Phe Ser Phe Arg Ile Asn Asp Asn Ala
 260 265 270
 Ile Pro Glu Leu Leu Glu Gly Tyr Lys Pro Glu Thr Lys Lys Pro Gly
 275 280 285
 Arg Pro Glu Glu Glu Lys Phe Asp Pro Tyr Arg His Ile Thr Glu Gln
 290 295 300
 Gln His Arg Ile Ala Leu Glu Ala Val Phe Gly Leu Lys Glu Glu Tyr
 305 310 315 320
 Gly Tyr Lys Glu Leu Glu Asp Thr Leu Ile Lys Thr Tyr Val Ser Val
 325 330 335
 Gly Val Lys Leu Asn His Lys Lys Ala Val Ser Leu Ile Thr Met Leu
 340 345 350
 Arg Asn Lys Arg Met Ile Val Gln Glu Asn Gly Arg Lys Tyr Thr Phe
 355 360 365
 Met Pro Asp Phe His Tyr
 370

<210> 9217
 <211> 423
 <212> PRT
 <213> B.fragilis

<400> 9217

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Ile Phe Tyr Leu Cys Asn Leu Asn Lys Lys Leu Glu Val Met Lys Tyr
1      5      10      15
Lys Leu Leu Val Leu Asp Val Asp Gly Thr Leu Leu Asn Asp Glu Lys
20      25      30
Glu Ile Thr Pro Arg Thr Leu Ala Thr Leu Leu Lys Val Gln Gln Met
35      40      45
Gly Val His Ile Val Leu Ala Ser Gly Arg Pro Thr Tyr Gly Ile Leu
50      55      60
Pro Leu Ala Lys Lys Leu Glu Leu Gly Asn Tyr Gly Gly Tyr Ile Leu
65      70      75      80
Ser Tyr Asn Gly Ala Gln Val Ile Asn Ala Lys Asn Gly Glu Val Leu
85      90      95
Leu Glu Arg Arg Ile Asn Pro Glu Met Leu Pro Tyr Leu Glu Lys Lys
100     105     110
Ala Arg Lys Asn Gly Phe Ala Ile Phe Thr Tyr Thr Glu Asp Arg Met
115     120     125
Ile Ala Asp Gln Ala Asp Asn Glu His Ile Leu Gln Glu Ala Phe Leu
130     135     140
Asn Arg Met Glu Leu Ile Glu Glu Pro Glu Phe Ser Val Ala Val Asp
145     150     155     160
Phe Ala Pro Ser Lys Cys Met Leu Val Ser Asp Asp Glu Glu Ala Leu
165     170     175
Ile Gly Leu Glu Glu His Trp Lys Lys Arg Leu Asn Gly Ala Leu Asp
180     185     190
Val Phe Arg Ser Glu Pro Tyr Phe Leu Glu Val Leu Pro Cys Gly Ile
195     200     205
Asp Lys Ser Thr Ser Leu Gly Ala Leu Leu Ser His Leu Asp Ile Thr
210     215     220
Pro Glu Glu Ile Ile Val Ile Gly Asp Gly Val Cys Asp Val Ser Met
225     230     235     240
Ile Gln Phe Ala Gly Leu Gly Ile Ala Met Gly Asn Ala Gln Asp Ser
245     250     255
Val Lys Val Cys Ala Asp Val Val Thr Ala Ser Asn Glu Glu Asp Gly
260     265     270
Val Ala Leu Ala Val Glu Lys Ala Ile Leu Ser Glu Ile Arg Pro Ala
275     280     285
Glu Ile Pro Leu Asp Gln Leu Asn Glu Arg Ala Arg His Ala Leu Met
290     295     300
Gly Asn Leu Gly Ile Gln Tyr Thr Tyr Ala Ser Glu Asp Arg Val Glu
305     310     315     320
Ala Thr Met Pro Val Asp Glu Arg Thr Arg Gln Pro Phe Gly Ile Leu
325     330     335
His Gly Gly Ala Thr Leu Ala Leu Ala Glu Thr Val Ala Gly Leu Gly
340     345     350
Ser Met Ile Leu Cys Gln Pro Asp Glu Ile Val Val Gly Met Gln Val
355     360     365
Ser Gly Asn His Met Ser Ser Ala His Glu Gly Asp Thr Val Arg Ala
370     375     380
Val Gly Thr Ile Ile His Lys Gly Arg Ser Ser His Val Trp Asn Val
385     390     395     400
Asp Val Phe Thr Ser Thr Asp Lys Leu Val Ser Ser Ile Arg Val Val
405     410     415
Asn Ser Ile Leu Lys Lys Arg
420

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<210> 9218

<211> 346

<212> PRT

<213> B.fragilis

<400> 9218

Tyr Lys Phe Asp Lys Met Lys Lys Ile Ile Phe Met Thr Leu Phe Leu
 1 5 10 15
 Leu Val Ala Met Thr Gly Gln Ser Lys Gly Lys Gly Glu Phe Thr Val
 20 25 30
 Leu Gln Trp Asn Val Trp Gln Glu Gly Thr Met Val Pro Gly Gly Tyr
 35 40 45
 Asp Ala Ile Val Asn Glu Ile Val Arg Leu Gln Pro Asp Phe Val Thr
 50 55 60
 Phe Ser Glu Val Arg Asn Tyr His Asn Thr Arg Phe Asn Glu Arg Ile
 65 70 75 80
 Val Ala Ser Leu Lys Glu Lys Gly Leu Asp Tyr Tyr Ser Phe Tyr Thr
 85 90 95
 Tyr Asp Thr Gly Leu Leu Ser Lys His Pro Ile Thr Asp Ser Leu Thr
 100 105 110
 Val Phe Pro Glu Asn Gly Asp His Gly Ser Ile Tyr Arg Leu Thr Ser
 115 120 125
 Ser Val Asn Gly His Lys Val Ala Val Tyr Thr Ser His Leu Asp Tyr
 130 135 140
 Leu Asp Cys Ala Tyr Tyr Asn Val Arg Gly Tyr Asp Gly Ser Ser Trp
 145 150 155 160
 Lys Glu Ile Pro Ile Pro Thr Thr Val Glu Glu Val Leu Lys Val Asn
 165 170 175
 Val Ala Ser Gln Arg Asp Asp Ala Ile Lys Met Phe Ile Ala Gln Ala
 180 185 190
 Gln Lys Asp Ile Ala Asn Gly Tyr Ser Val Ile Ile Gly Gly Asp Phe
 195 200 205
 Asn Glu Pro Ser His Leu Asp Trp Ile Glu Ala Asn Lys Asn Leu Tyr
 210 215 220
 Asp His Asn Gly Leu Val Ile Pro Trp Thr Val Thr Thr Leu Leu Glu
 225 230 235 240
 Gln Asn Gly Phe Val Asp Thr Tyr Arg His Ile Tyr Pro Asn Pro Leu
 245 250 255
 Thr His Pro Gly Phe Thr Tyr Pro Ala Asp Asn Pro Leu Lys Glu Pro
 260 265 270
 Gly Lys Leu Thr Trp Ala Pro Lys Ala Asp Glu Arg Asp Arg Ile Asp
 275 280 285
 Phe Ile Phe Tyr Lys Gly Lys Asn Leu Glu Ala Lys Lys Ala Ile Val
 290 295 300
 Phe Gly Pro Lys Gly Ser Ile Val Arg Asn Lys Arg Val Gln Glu Thr
 305 310 315 320
 Ser Lys Asp Asn Phe Leu Leu Pro Leu Asp Val Trp Pro Thr Asp His
 325 330 335
 Lys Gly Leu Leu Val Thr Phe Lys Ile Lys
 340 345

<210> 9219

<211> 278

<212> PRT

<213> B.fragilis

<400> 9219

Asn Ile Ile Asp Met Asn Lys Leu Leu Tyr Cys Phe Phe Leu Ser Phe
 1 5 10 15
 Ser Val Ile Ala Thr Ser Ala Cys Thr Asp Asp Lys Glu Glu Arg Glu
 20 25 30
 Phe Pro Pro Ala Pro Asp Phe Ser Leu Met Ile Leu Lys Glu Asn Leu

35 40 45
 His Ser Asn Gly Gly Asp Val Leu Arg Thr Asp Thr Tyr Val Tyr Asp
 50 55 60
 Asn Asn Lys Leu Thr Thr His Thr Thr Leu Gln Glu Phe Tyr Gly Gln
 65 70 75 80
 Ser Leu Thr His Glu Thr Thr Leu Ser Tyr Ser Gly Asn Glu Val Thr
 85 90 95
 Leu Ala Asp Glu Asn Gly Asn Thr Ala Ile Tyr Ile Leu Gly Ser Ala
 100 105 110
 Gly Tyr Ala Thr Glu Cys Thr Tyr Lys Leu Ser Asp Gln Val Arg Lys
 115 120 125
 Tyr Thr Phe Thr Tyr Ser Gly Glu Tyr Leu Thr Arg Ile Asp Glu Glu
 130 135 140
 Ile Asn Ser Thr Pro Tyr Ser Ser Val Glu Leu Ala Tyr Asp Asp Asn
 145 150 155 160
 Gly Asn Leu Ser His Ile Ile Ala Asn Gly Leu Gln Thr Asn Tyr Gln
 165 170 175
 Ala Gly Asn Thr Glu Asn Leu Tyr Gln Leu Pro Cys Leu Gln Val Cys
 180 185 190
 Glu Thr Tyr Pro Leu Ser Phe His Asn Asp Ala Ile Tyr Ala Gly Leu
 195 200 205
 Leu Gly Arg Gln Ser Lys His Leu Ile Ile Gly Asn Thr Pro Lys Glu
 210 215 220
 Asn Lys Glu Glu Tyr Thr Lys Tyr Thr Tyr Glu Leu Asp Glu Asn Glu
 225 230 235 240
 Lys Pro Thr Gly Ile Ile Ala Lys Thr Thr Ser Thr Gly Thr Val Ile
 245 250 255
 Asp Ile Thr Gly Asn Ala Tyr Asp Glu Thr Lys Thr Asp Thr Arg Thr
 260 265 270
 Ile Gly Ile Thr Ile Glu
 275

<210> 9220
 <211> 76
 <212> PRT
 <213> B.fragilis

<400> 9220
 Lys Arg Asn Glu Lys Ser Leu Glu Gly Lys Arg Gly Tyr Leu Ile Ser
 1 5 10 15
 Ile Ser Leu Ser Pro Ser Ser Thr Phe Leu Tyr Ser Ala Ile Gln Tyr
 20 25 30
 Thr Tyr Gly Gly Gln Thr Arg Lys Val Arg Ser Cys Ala His Asp Glu
 35 40 45
 Gly Gln Glu Thr Asp Pro Gln Val Ala Asp Ser Asp Asn His Glu Tyr
 50 55 60
 Arg Glu Asn His Arg His Asn Asn Gly His Ser Phe
 65 70 75

<210> 9221
 <211> 111
 <212> PRT
 <213> B.fragilis

<400> 9221
 Lys His Thr Asp Met Glu Glu Lys Lys Glu Ala Arg Gln Lys Arg Asn
 1 5 10 15
 Arg Glu Lys Leu Ala Thr Ala Asp Trp Val Met Ala Glu Phe Tyr Ala
 20 25 30

Thr Trp Cys Pro His Cys Lys Arg Met Gln Pro Val Val Glu Glu Phe
 35 40 45
 Lys Lys Leu Met Glu Gly Thr Leu Glu Val Val Gln Ile Asp Ile Asp
 50 55 60
 Gln Glu Asp Ala Leu Ala Asn Phe Tyr Thr Ile Glu Ser Val Pro Thr
 65 70 75 80
 Phe Ile Leu Met Arg Lys Gly Glu Gln Leu Trp Arg Gln Ser Gly Glu
 85 90 95
 Leu Asp Leu Glu Arg Leu Lys Lys Ala Val Lys Asp Leu Lys Ser
 100 105 110

<210> 9222

<211> 291

<212> PRT

<213> B.fragilis

<400> 9222

Lys Asn Thr Glu Met Asn Ile Leu Val Thr Gly Ala Asn Gly Gln Leu
 1 5 10 15
 Gly Asn Glu Met Gln Val Leu Ala Arg Glu Asn Leu Gln His Thr Tyr
 20 25 30
 Phe Phe Thr Asp Val Gln Glu Leu Asp Ile Cys Asp Glu Gln Ala Val
 35 40 45
 Tyr Ala Tyr Val Ser Glu His Lys Ile Asn Ile Ile Val Asn Cys Ala
 50 55 60
 Ala Tyr Thr Ala Val Asp Lys Ala Glu Asp Asn Val Glu Leu Cys Asp
 65 70 75 80
 Lys Leu Asn Asn Ile Ala Pro Gly Tyr Leu Ala Arg Ala Ala Gln Ala
 85 90 95
 Asn Gly Ala Ala Met Ile Gln Val Ser Thr Asp Tyr Val Phe Asp Gly
 100 105 110
 Thr Ala His Ile Pro Tyr Thr Glu Glu Glu Pro Thr Cys Pro Ala Ser
 115 120 125
 Val Tyr Gly Ser Thr Lys Leu Ala Gly Glu Gln Asn Val Met Asp His
 130 135 140
 Cys Glu Lys Ala Met Val Ile Arg Thr Ala Trp Leu Tyr Ser Ile Tyr
 145 150 155 160
 Gly Asn Asn Phe Val Lys Thr Met Ile Arg Leu Gly Gln Glu Arg Asp
 165 170 175
 Ser Leu Gly Val Ile Phe Asp Gln Ile Gly Thr Pro Thr Tyr Ala Asn
 180 185 190
 Asp Leu Ala Gln Ala Ile Phe Ala Ala Ile Asn Lys Gly Val Val Arg
 195 200 205
 Gly Ile Tyr His Phe Ser Asp Glu Gly Val Cys Ser Trp Tyr Asp Phe
 210 215 220
 Thr Val Ala Ile His Arg Leu Ala Gly Ile Ala Ser Cys Lys Val Lys
 225 230 235 240
 Pro Leu His Thr Ala Asp Tyr Pro Ala Lys Ala Pro Arg Pro His Tyr
 245 250 255
 Ser Val Leu Asp Lys Thr Lys Ile Lys Asp Thr Phe Gly Ile Glu Ile
 260 265 270
 Pro His Trp Glu Glu Ser Leu Lys Arg Cys Ile Asn Gln Leu Arg Met
 275 280 285
 Glu Thr Leu
 290

<210> 9223

<211> 373

<212> PRT

<213> B.fragilis

<400> 9223

Tyr Ile Lys Glu Glu Met Thr Leu Glu Glu Thr Asn Asn Cys Glu Ile
 1 5 10 15
 Ile Asp Glu Leu Ile Arg Gln Gly Arg Ser Phe Ala Met Tyr Arg Asn
 20 25 30
 Pro Gly Glu Glu Glu Pro His Phe Leu Met Gln Thr Cys Gly Glu Val
 35 40 45
 His Leu Ile Arg Lys Met Glu Asp Leu Asn Gly Arg Thr Gly Phe Val
 50 55 60
 Ile Ala Pro Phe Arg Val Thr Pro Gln Cys Pro Ile Ile Leu Ile Arg
 65 70 75 80
 Pro Asp Cys His Glu Ile Pro Ser Cys Ala Gly Asn Leu His Thr Pro
 85 90 95
 Ala Gln Gly Asp Asp Ala Ala Ser Tyr Gly Gln Gln Leu Arg Ser Asp
 100 105 110
 Arg Ser Leu Gly Ala Lys Lys Ala Tyr Glu Ala Cys Phe Asp Val Phe
 115 120 125
 Ile Arg Ala Leu Arg Glu Arg Thr Phe Asp Lys Leu Val Leu Ser Arg
 130 135 140
 Arg Met Met Val Arg Arg Glu Pro Gly Phe Ser Pro Ala Ala Ala Phe
 145 150 155 160
 Tyr Arg Ala Cys Arg Arg Tyr Ile Tyr Ser Tyr Val Tyr Leu Cys Tyr
 165 170 175
 Thr Pro Gln Thr Gly Val Trp Met Gly Ser Thr Pro Glu Ile Ile Leu
 180 185 190
 Ser Gly Glu Lys Gly Glu Trp Asn Thr Val Ala Leu Ala Gly Thr Gln
 195 200 205
 Ser Leu Gln Asn Gly Glu Leu Pro Gln Gln Trp Asp Glu Lys Asn Arg
 210 215 220
 Glu Glu Gln Glu Tyr Val Ala Ala Tyr Ile Arg Lys Gln Leu Arg Ser
 225 230 235 240
 Leu Gly Ile Ser Pro Thr Glu Lys Gly Pro Tyr Pro Ala Phe Ala Gly
 245 250 255
 Ala Leu Ser His Leu Lys Thr Asp Phe His Phe Ser Leu Asn Asp Ser
 260 265 270
 Gln Arg Leu Gly Asp Leu Leu Lys Leu Leu His Pro Thr Pro Ala Val
 275 280 285
 Cys Gly Leu Pro Lys Glu Glu Ala Tyr Arg Phe Ile Leu Asp Asn Glu
 290 295 300
 Gly Tyr Asp Arg Ser Tyr Tyr Ser Gly Phe Ile Gly Trp Leu Arg Pro
 305 310 315 320
 Glu Gly Arg Thr Asp Leu Tyr Val Asn Leu Arg Cys Met Asn Val Lys
 325 330 335
 Glu Asp Ser Leu Thr Leu Tyr Ala Gly Gly Gly Leu Leu Ala Ser Ser
 340 345 350
 Glu Leu Asp Asp Glu Phe Gln Glu Thr Glu Lys Lys Met Gln Thr Met
 355 360 365
 Gln Asn Leu Asn Ser
 370

<210> 9224

<211> 579

<212> PRT

<213> B.fragilis

<400> 9224

Val Ser Gly Asp Gly Lys Glu Asp Ala Asp His Ala Glu Leu Glu Leu

1 5 10 15
 Leu Asn Lys Ile Ile Tyr Lys Ala Met Tyr Ser Asp Lys Lys Asn Ile
 20 25 30
 Leu Gln Leu Val Ala Leu Leu Arg Ala His Gly Val Thr Lys Val Val
 35 40 45
 Leu Cys Pro Gly Ser Arg Asn Ala Pro Ile Val His Thr Leu Ala Gly
 50 55 60
 His Pro Asp Phe Thr Cys Tyr Ser Val Thr Asp Glu Arg Ser Ala Gly
 65 70 75 80
 Phe Phe Ala Ile Gly Leu Ala Leu Gln Gly Gly Thr Pro Ala Ala Val
 85 90 95
 Cys Cys Thr Ser Gly Thr Ala Leu Leu Asn Leu His Pro Ala Ile Ala
 100 105 110
 Glu Ala Tyr Tyr Gln Lys Val Ser Leu Val Val Ile Ser Ala Asp Arg
 115 120 125
 Pro Ala Ala Trp Ile Asn Gln Met Asp Gly Gln Thr Leu Pro Gln Pro
 130 135 140
 Gly Val Phe Arg Ser Leu Val Lys Lys Ser Val Asp Leu Pro Glu Ile
 145 150 155 160
 His Thr Asp Glu Asp Glu Trp Tyr Cys Asn Arg Leu Leu Asn Glu Ala
 165 170 175
 Leu Leu Glu Leu Asn His His Gly Lys Gly Pro Val His Ile Asn Val
 180 185 190
 Pro Val Ser Glu Pro Leu Phe Gln Phe Thr Ala Glu Ser Leu Pro Glu
 195 200 205
 Val Arg Val Ile Thr Arg Tyr Gln Gly Leu Asn Val Tyr Asp Arg Asp
 210 215 220
 Tyr Asp Gly Leu Ile Asp Arg Leu Asn Lys Tyr Asn Arg Arg Met Met
 225 230 235 240
 Ile Val Gly Gln Met Asn Leu Ile Tyr Leu Phe Glu Lys Lys Tyr Ser
 245 250 255
 Lys Met Leu Tyr Lys Gln Phe Ala Trp Phe Thr Glu His Leu Gly Asn
 260 265 270
 Gln Thr Val Pro Gly Ile Pro Ile Arg Asn Phe Asp Ala Ala Leu Tyr
 275 280 285
 Ala Met Ser Pro Glu Met Gln Glu Lys Met Ile Pro Glu Leu Val Ile
 290 295 300
 Thr Tyr Gly Gly His Ile Val Ser Lys Arg Met Lys Lys Tyr Leu Arg
 305 310 315 320
 Gln His Pro Pro Lys Glu His Trp His Val Ser Pro Asp Gly Glu Val
 325 330 335
 Ile Asp Leu Phe Gln Gly Ala Leu Thr Thr Ile Ile Glu Met Asp Pro
 340 345 350
 Phe Glu Phe Met Glu Lys Ile Ala Phe Leu Leu Asp Asn Arg Thr Pro
 355 360 365
 Glu Tyr Pro Arg Gln Trp Glu Asn Phe Cys Lys Glu Leu Pro Arg Pro
 370 375 380
 Glu Leu Pro Tyr Ser Glu Met Ser Ala Ile Gly Ser Leu Ile Gln Ala
 385 390 395 400
 Leu Pro Ala Ser Cys Ala Leu His Leu Ala Asn Ser Ser Ala Val Arg
 405 410 415
 Tyr Ala Gln Leu Tyr Ser Leu Pro Asp Thr Val Glu Val Cys Cys Asn
 420 425 430
 Arg Gly Thr Ser Gly Ile Glu Gly Ser Leu Ser Thr Ala Ile Gly Tyr
 435 440 445
 Ala Ala Ala Ser Lys Lys Leu Asn Phe Val Val Ile Gly Asp Leu Ser
 450 455 460
 Phe Phe Tyr Asp Met Asn Ala Leu Trp Asn Asn His Phe Gly Ser Asn
 465 470 475 480

[illegible]

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<210> 9225
<211> 351
<212> PRT
<213> B.fragilis
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<400> 9225

Ser 1	Gly	Gly	Asp	Ile 5	Met	Leu	Ala	Tyr	Thr 10	Tyr	Val	Glu	His	Gly 15	Lys
Phe	Glu	Leu	Leu	Glu 20	Lys	Leu	Arg	Pro 25	Gln	Ile	Lys	Asp	Ala 30	Arg	Asp
Ala	Ile	Val	Arg	Val 35	Thr	Leu	Gly 40	Ser	Ile	Cys	Thr	Ser 45	Asp	Leu	His
Ile	Lys 50	His	Gly	Ser	Val 55	Pro	Arg	Ala	Val	Pro 60	Gly	Ile	Thr	Val	Gly
His 65	Glu	Met	Val	Gly 70	Ile	Val	Glu	Glu	Val 75	Gly	Ser	Gly	Val	Ile	Ser
Val	Arg	Pro	Gly	Asp 85	Arg	Val	Thr	Val	Asn 90	Val	Glu	Thr	Phe 95	Cys	Gly
Glu	Cys	Phe	Phe 100	Cys	Arg	His	Gly	Tyr 105	Val	Asn	Asn	Cys	Thr 110	Asp	Pro
Asp	Gly 115	Gly	Trp	Ala	Leu	Gly	Cys 120	Arg	Ile	Asp	Gly	Gly 125	Gln	Ala	Glu
Tyr	Val 130	Arg	Val	Pro	Tyr	Ala 135	Glu	Gln	Gly	Leu	Asn 140	Arg	Ile	Pro	Asp
Asn 145	Val	Ser	Asp	Glu 150	Gln	Ala	Leu	Phe	Val 155	Gly	Asp	Val	Leu	Ala	Thr
Gly	Phe	Trp	Ala 165	Thr	Arg	Ile	Ser	Glu	Ile 170	Ser	Glu	Asp	Asp 175	Thr	Val
Leu	Ile	Ile	Gly 180	Ala	Gly	Pro	Thr	Gly 185	Ile	Cys	Thr	Leu	Leu 190	Cys	Val
Met	Leu 195	Lys	Lys	Pro	Arg	Arg	Ile 200	Ile	Val	Cys	Glu	Arg 205	Ser	Ala	Glu
Arg	Ile 210	Arg	Phe	Val	Arg	Glu 215	His	Tyr	Pro	Asp	Val	Leu 220	Val	Thr	Glu
Pro 225	Glu	Asn	Cys	Arg 230	Asp	Phe	Val	Leu	Cys 235	Asn	Ser	Asp	His	Gly	Gly
Ala	Asp	Val	Val 245	Leu	Glu	Val	Ala	Gly	Ser 250	Glu	Glu	Thr	Phe 255	Arg	Leu
Ala	Trp	Glu	Cys 260	Ala	Arg	Pro	Asn 265	Ala	Ile	Val	Thr	Ile	Val 270	Ala	Leu
Tyr	Asp	Lys 275	Pro	Gln	Phe	Leu	Pro 280	Leu	Pro	Asp	Met	Tyr 285	Gly	Lys	Asn
Leu	Ile 290	Phe	Lys	Thr	Gly	Gly 295	Val	Asp	Gly	Cys	Asp 300	Cys	Ala	Glu	Ile

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<210> 9226
<211> 145
<212> PRT
<213> B.fragilis
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<210> 9227
<211> 276
<212> PRT
<213> B.fragilis
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<400>	9227															
Ile	Glu	Met	Glu	Thr	Lys	Arg	Glu	Trp	Thr	Pro	Ile	Lys	Glu	Tyr	Glu	
1				5					10					15		
Asp	Ile	Leu	Phe	Asp	Tyr	Tyr	Asn	Gly	Ile	Ala	Arg	Ile	Thr	Ile	Asn	
		20						25					30			
Arg	Glu	Arg	Tyr	Arg	Asn	Ala	Phe	Thr	Pro	Thr	Thr	Thr	Gly	Glu	Met	
		35					40					45				
Ser	Asp	Ala	Met	Arg	Ile	Cys	Arg	Glu	Glu	Pro	Asp	Ile	Asn	Val	Val	
	50					55					60					
Val	Leu	Thr	Gly	Ala	Gly	Asp	Lys	Ala	Phe	Cys	Ser	Gly	Gly	Asp	Gln	
65					70					75					80	
Asn	Val	Lys	Gly	Arg	Gly	Gly	Tyr	Ile	Gly	Lys	Asp	Gly	Val	Pro	Arg	
				85					90					95		
Leu	Ser	Val	Leu	Asp	Val	Gln	Lys	Gln	Ile	Arg	Ser	Ile	Pro	Lys	Pro	
		100						105					110			
Val	Ile	Ala	Ala	Val	Asn	Gly	Phe	Ala	Ile	Gly	Gly	Gly	His	Val	Leu	
		115					120					125				
His	Val	Val	Cys	Asp	Leu	Ser	Ile	Ala	Ser	Glu	Asn	Ala	Ile	Phe	Gly	
	130					135					140					
Gln	Thr	Gly	Pro	Arg	Val	Gly	Ser	Phe	Asp	Ala	Gly	Phe	Gly	Ser	Ser	

145 150 155 160
 Tyr Leu Ala Arg Val Val Gly Gln Lys Lys Ala Arg Glu Ile Trp Phe
 165 170 175
 Leu Cys Arg Lys Tyr Asn Ala Gln Glu Ala Leu Asp Met Gly Leu Val
 180 185 190
 Asn Lys Val Val Pro Leu Asp Lys Leu Glu Asp Glu Tyr Val Gln Trp
 195 200 205
 Ala Glu Glu Met Met Gln Leu Ser Pro Leu Ala Leu Arg Met Ile Lys
 210 215 220
 Ala Gly Leu Asn Ala Glu Leu Asp Gly Gln Ala Gly Ile Gln Glu Leu
 225 230 235 240
 Ala Gly Asp Ala Thr Leu Leu Tyr Tyr Leu Thr Asp Glu Ala Gln Glu
 245 250 255
 Gly Lys Asn Ala Phe Leu Glu Lys Arg Lys Pro Asp Phe Lys Gln Tyr
 260 265 270
 Pro Lys Phe Pro
 275

<210> 9228
 <211> 134
 <212> PRT
 <213> B.fragilis

<400> 9228
 Lys Lys Met Glu Gln Thr Phe Lys Ala Arg Asn Pro Gln Leu Gly Val
 1 5 10 15
 Trp Leu Phe Ala Ile Gly Ile Ile Ala Cys Ile Ala Ile Ser Phe Ile
 20 25 30
 Thr Ile Gln Ala Ile Trp Ile Gly Thr Ala Cys Ile Gly Pro Ser Val
 35 40 45
 Thr Ile Tyr Phe Ser Gln Thr Ser Cys Lys Tyr Ile Val Lys Lys Asn
 50 55 60
 Gly Asp Leu Gln Ile Val Asn Asp Phe Phe Arg Gln Lys Arg Thr Phe
 65 70 75 80
 Ser His Ile Thr Asp Val Thr Tyr Thr Arg His Ala Leu Gly Met Gln
 85 90 95
 Lys Ile Lys Ile Arg His Ala Thr Gly Phe Val Met Ile Asp Pro Gln
 100 105 110
 Ser Pro Arg Glu Leu Ile Lys Ala Leu Gln Lys Thr Asn Pro Asp Val
 115 120 125
 Arg Val Lys Asn Phe Ile
 130

<210> 9229
 <211> 161
 <212> PRT
 <213> B.fragilis

<400> 9229
 Arg Lys Met Glu Arg Ala Thr Phe Ser Leu Leu Phe Tyr Ile Arg Arg
 1 5 10 15
 Thr Lys Leu Asn Arg His Gly Glu Ala Pro Ile Leu Met Arg Ile Thr
 20 25 30
 Val Asn Gly Val Arg Ala Asp Ala Ser Ile Lys Lys Thr Ile Leu Pro
 35 40 45
 Gln Leu Trp Asp Ala Asp Lys Gly Arg Ala Leu Asp Lys Lys Arg Glu
 50 55 60
 Gly Lys Glu Leu Asn Leu Tyr Leu Asp Ala Ile His Met Arg Ile Leu
 65 70 75 80

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<210> 9230
<211> 331
<212> PRT
<213> B.fragilis
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<400>	9230															
Arg	Lys	Arg	Glu	Lys	Ser	Ile	Val	Pro	Leu	Ala	Gly	Asn	Leu	Pro	Ser	
1				5					10					15		
Leu	Ile	Gly	Gln	Ile	Ala	Lys	Cys	Phe	Phe	Phe	Phe	Ser	Cys	Ile	Ile	
			20					25					30			
Tyr	Glu	Ile	Ala	Leu	Asn	Leu	Ile	Thr	Asn	Thr	Tyr	Lys	Leu	Met	Asn	
			35				40					45				
Lys	Ile	Cys	Phe	Phe	Ile	Gly	Val	Phe	Ile	Thr	Leu	Leu	Leu	Ala	Gly	
	50					55					60					
Cys	Ser	Ser	Asn	Pro	Ile	Thr	His	Val	Arg	Val	Ala	Thr	Phe	Asn	Ile	
65				70						75					80	
Arg	Tyr	Asp	Asn	Pro	Gly	Asp	Ser	Leu	Asn	Ser	Trp	Lys	Tyr	Arg	Lys	
				85					90					95		
Glu	Lys	Val	Cys	Glu	Tyr	Ile	Arg	Glu	Lys	His	Pro	Asp	Val	Leu	Gly	
			100					105					110			
Met	His	Glu	Val	Leu	Asn	His	Gln	Ser	Lys	Asp	Leu	Met	Ser	Gly	Leu	
			115				120						125			
Pro	Asp	Tyr	Ala	Tyr	Val	Gly	Val	Gly	Arg	Glu	Asp	Gly	Lys	Thr	Gln	
	130					135						140				
Gly	Glu	Tyr	Ala	Pro	Val	Phe	Tyr	Arg	Lys	Asp	Lys	Tyr	Asp	Leu	Leu	
145				150						155					160	
Asp	Ser	Asn	Thr	Phe	Trp	Leu	Ser	Glu	His	Pro	Asp	Ser	Ile	Gly	Lys	
				165					170					175		
Leu	Gly	Trp	Asp	Ala	Ala	Cys	Thr	Arg	Val	Ala	Thr	Trp	Ala	Lys	Leu	
			180					185					190			
Lys	Asp	Lys	Thr	Thr	Gly	Lys	Glu	Phe	Leu	Met	Leu	Asn	Thr	His	Phe	
			195				200					205				
Asp	His	Val	Gly	Thr	Glu	Ala	Arg	Arg	Asn	Ser	Ala	Leu	Leu	Ile	Ile	
	210					215					220					
Asp	Lys	Ile	Lys	Glu	Ile	Ala	Gly	Thr	His	Pro	Ala	Met	Met	Thr	Gly	
225				230						235					240	
Asp	Phe	Asn	Val	Ser	Glu	Glu	Trp	Glu	Ala	Tyr	Lys	Thr	Ile	Thr	Ser	
				245					250					255		
Asn	Glu	Phe	Val	Leu	Lys	Asp	Ala	Trp	Lys	Ile	Ala	Gly	Lys	Gln	Ser	
			260					265					270			
Gly	Glu	Asn	Tyr	Thr	Phe	His	Asp	Phe	Gly	Arg	Val	Pro	Val	Ala	Glu	
		275					280					285				
Arg	Glu	Lys	Ile	Asp	Phe	Ile	Phe	Val	Thr	Pro	Gln	Ile	Lys	Val	Ala	
	290					295					300					
Asp	Ala	Glu	Ile	Ile	Ser	Ser	Ala	Ile	Thr	Asp	Ser	Thr	Tyr	Leu	Ser	
305				310						315					320	

Asp His Asn Ala His Leu Ala Asp Leu Glu Phe
 325 330

<210> 9231
 <211> 64
 <212> PRT
 <213> B.fragilis

<400> 9231
 Cys Gln Pro Trp Val Ser His Leu Asn Ile Lys Ser Arg Asn Asn Tyr
 1 5 10 15
 Ile Ile Asn Tyr Lys Asn Ser Gln Asn Glu Lys Lys Asn Cys Phe Tyr
 20 25 30
 Cys Gly Thr Phe Met Arg Asn Val Leu His Asp Ser Ile Arg Thr Val
 35 40 45
 Gln Asn Arg Trp Lys Glu Asn Gln Cys Arg Gln Ser Gly Thr Ser Arg
 50 55 60

<210> 9232
 <211> 805
 <212> PRT
 <213> B.fragilis

<400> 9232
 Leu Asn Leu Cys Tyr Phe Cys Leu Asp Arg Glu Leu Thr Met Glu Phe
 1 5 10 15
 Ile Asn Pro Lys Phe Lys Tyr Ile Phe Ala Ser Ile Leu Leu Leu Gly
 20 25 30
 Gly Phe Leu Cys Gly Tyr Asn Phe Lys Gln Trp Tyr Val Thr Asn His
 35 40 45
 Arg Asn Glu Lys His Ile Ser Leu Ile Tyr Ser Cys Ser Lys Lys Glu
 50 55 60
 Ala Asp Arg Gly Gln Phe Glu Glu Leu Leu Lys Lys Glu Phe Arg Ser
 65 70 75 80
 Lys Gly Val Glu Pro Ile Phe Asp Lys Phe Tyr Leu Asp Cys Asn Arg
 85 90 95
 Phe Gly Gln Lys Val Glu Ile Glu His Ile Ser Asn Tyr Leu Glu Ala
 100 105 110
 Leu Lys Ser Lys Pro Ile Asp Leu Val Met Ala Met Gly Asp Gln Ala
 115 120 125
 Thr His Ser Leu Leu Ser Thr Arg His Pro Leu Leu Tyr Ser Val Pro
 130 135 140
 Val Val Ala Cys Asn Val His Phe Pro Asp Glu Asp Leu Leu Lys Lys
 145 150 155 160
 Tyr Glu Ser Arg Lys Val Tyr Ala Leu Arg Asp Thr Pro Asp Phe Lys
 165 170 175
 His Asn Met Glu Phe Ile Arg Ser Leu Gln Pro His Val Gly Leu Glu
 180 185 190
 Ile Val Tyr Asn Ile Asp Leu Thr Pro Leu Gly His Lys Ser Phe Asp
 195 200 205
 Leu Leu Asn Gln Val Val Asp Arg Lys Asp Val Gln Ile Leu Gly His
 210 215 220
 Lys Ser Ala Phe Ser Met Glu Tyr Glu Tyr Lys Glu Met Arg Glu Met
 225 230 235 240
 Ile Glu Phe Tyr Asn Leu Met Pro Ala Val Ala Asn Asn Arg Ile Lys
 245 250 255
 Lys Lys Glu Leu Thr Ile Ser Leu Cys Pro Phe Arg Tyr Ile Lys Gly
 260 265 270
 Ala Ser Leu Leu Val Met Met Glu Asn Ser Lys Ser Glu Gln Gly Lys

275 280 285
 Lys Ala Phe Leu Leu Asp Lys Phe Asp Met Val Ser Phe Pro Ile Val
 290 295 300
 Asn Ala Leu Ser Ile Pro Ser Phe Ser Cys Val His Ala Gly Phe Gly
 305 310 315 320
 Glu Gly Asn Lys Ile Val Gly Gly Tyr Met Ala Thr Lys Glu Ile Ser
 325 330 335
 Val Gln Ala Ala Asp Leu Ser Thr Arg Leu Met Asn Lys Glu Lys
 340 345 350
 Ile Gly Met Pro Lys Ile Arg Asp Leu Arg Lys Glu Tyr Val Leu Asp
 355 360 365
 Trp Ser Val Phe Ser Thr Tyr Asn Gly Tyr Asp Ile Lys Asn Val Gly
 370 375 380
 Lys Asn Val Arg Ile Ile Asn Tyr Pro Ile Tyr Asp His Tyr Arg Glu
 385 390 395 400
 Glu Phe Tyr Leu Leu Gly Val Leu Phe Val Phe Ala Phe Ile Phe Ile
 405 410 415
 Ser Val Ser Leu Leu His Thr Arg Arg Arg Ser Leu Ile Glu Arg Lys
 420 425 430
 Asn Leu Lys Ile Leu Glu Glu Ala His Lys Arg Leu Thr Leu Ser Ala
 435 440 445
 Asp Gly Gly Gln Ile Ser Leu Trp Asn Met Gln Arg Ser Asp Ile Glu
 450 455 460
 Phe Asp Asp Asn Tyr Ala Arg Leu Thr Gly Val Glu Lys Arg Lys Phe
 465 470 475 480
 Lys Arg Thr Asp Phe Leu Glu Tyr Val His Pro Asp Asp Ser Gln Leu
 485 490 495
 Leu Ser Ser Phe Tyr Glu Ala Leu Cys Lys Ser Pro Gly Val Glu Ile
 500 505 510
 Gln Arg Val Arg Phe Arg Phe Asp Glu Lys Lys Gly Tyr Gln Trp Tyr
 515 520 525
 Glu Leu Arg Cys Arg Ser Leu Lys Asp Ile Lys Gly Glu Met Met Leu
 530 535 540
 Ala Gly Ile Met Gln Asn Ile Gln Glu Ser Val Glu Arg Glu His Gln
 545 550 555 560
 Leu Ile Val Ala Lys Gln Met Ala Glu Lys Ala Glu Leu Lys Gln Ser
 565 570 575
 Phe Leu Asn Asn Met Ser His Glu Ile Arg Thr Pro Leu Asn Ala Ile
 580 585 590
 Val Gly Phe Thr Asn Val Leu Leu Gly Glu Gly Ser Glu Glu Ile Asp
 595 600 605
 Pro Asp Glu Lys Ala Ser Met Leu Glu Ile Ile Asn His Asn Asn Glu
 610 615 620
 Leu Leu Leu Lys Leu Ile Asn Asp Val Leu Glu Ile Ser Arg Leu Asp
 625 630 635 640
 Ser Gly Ser Leu Asp Phe Asp Met Lys Glu Trp Asn Met Thr Asp Ile
 645 650 655
 Val Lys Glu Ile Tyr Lys Thr Tyr Gln Pro Leu Ile Arg Ser Ser Leu
 660 665 670
 Gln Phe Arg Leu Glu Leu Asp Asp Thr Val Ser Val Pro Val His Thr
 675 680 685
 Asp Arg Leu Arg Phe Ala Gln Val Ile Ser Asn Phe Leu Asn Asn Ala
 690 695 700
 Asn Lys Phe Thr Gln Asn Gly Tyr Ile Ala Leu Gly Cys Lys Val Asp
 705 710 715 720
 Lys Lys His Arg Glu Val Arg Ile Tyr Val Glu Asp Ser Gly Lys Gly
 725 730 735
 Ile Asp Glu Lys Glu Leu Met Met Ile Phe Glu Arg Phe Tyr Lys Thr
 740 745 750

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<210> 9233
<211> 924
<212> PRT
<213> B.fragilis
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<400>	9233																
Ser	Gln	Thr	Cys	Arg	Arg	Asp	Lys	Asn	Ile	Ile	Ile	Tyr	Lys	Met	Arg		
1				5					10					15			
Ile	Glu	Arg	Tyr	Val	Ile	Lys	Val	Arg	Asp	Gln	Ile	Arg	Lys	Ala	Leu		
			20					25					30				
Val	Ser	Ile	Ala	Glu	Pro	Leu	Glu	Tyr	Ile	Lys	Ala	Gln	Lys	Glu	Thr		
		35					40					45					
Phe	Tyr	Lys	Ala	Ala	Ile	Leu	Phe	Leu	Ile	Leu	Leu	Leu	Leu	Trp	Arg		
	50					55					60						
Ala	Tyr	Glu	Gly	Phe	Trp	Ile	Ser	Leu	Phe	Asp	Lys	Tyr	Val	Leu	Ser		
65					70					75					80		
Cys	Leu	Asn	Val	Ser	Trp	Asp	Trp	Val	Ser	Phe	Thr	Leu	Tyr	Thr	Leu		
				85				90						95			
Ile	Ile	Cys	Ser	Ile	Val	Tyr	Gln	Leu	Val	Gln	Cys	Phe	Lys	His	Lys		
			100					105					110				
His	Ile	Leu	Ser	Met	Tyr	His	Leu	Ser	Ile	Tyr	Ser	Val	Leu	Ile	Ile		
	115						120					125					
Val	Tyr	Thr	Phe	Tyr	Arg	Phe	Ser	Ala	Phe	His	Lys	Gly	Tyr	Gln	Asp		
	130					135					140						
Phe	Ser	Ser	Leu	Tyr	Tyr	Leu	Asp	Leu	Leu	Val	Leu	Gly	Leu	Leu	Val		
145					150					155					160		
Leu	Val	Val	Ser	Ala	Ile	Ser	Asn	Phe	Ile	Ile	Val	Leu	Met	Ser	Glu		
				165				170						175			
Gln	Arg	Asp	Lys	Pro	Asn	Thr	Asn	Phe	Phe	Met	Ile	Pro	Asp	Gln	Pro		
			180					185					190				
Ile	Thr	Thr	Asp	Asp	Asp	Asp	Arg	Leu	Asp	Tyr	Ala	Pro	Glu	Ala	Arg		
		195					200					205					
Met	Leu	Ala	Glu	Thr	Ile	Ser	Gly	Leu	Lys	Leu	Asn	Lys	Ser	Leu	Ser		
	210					215					220						
Ile	Gly	Val	Thr	Ser	Gln	Trp	Gly	Ser	Gly	Lys	Thr	Ser	Tyr	Leu	Asn		
225					230					235					240		
Leu	Val	Glu	Gln	Cys	Leu	Asp	Arg	Asn	Leu	Phe	Ile	Ile	Ile	Lys	Phe		
				245				250						255			
Asn	Pro	Arg	Tyr	Ser	Lys	Asn	Val	Ala	Cys	Ile	Gln	Glu	Asp	Phe	Phe		
			260				265						270				
Ser	Ile	Ile	Ser	Ser	Ala	Leu	Lys	Pro	Tyr	Asn	Ser	Cys	Phe	Ser	Lys		
		275					280					285					
Met	Phe	Lys	Asn	Tyr	Met	Glu	Thr	Leu	Gln	Leu	Phe	Asp	Asp	Lys	Asn		
	290					295					300						
Ile	Val	Thr	Ala	Ile	Leu	Asn	Leu	Lys	Gly	Ile	Val	Asp	Arg	Asp	Ser		
305					310					315					320		</

Glu Val Phe Lys Leu Ile Asp Gly Asn Ala Ala Phe Pro Asn Leu Val
 355 360 365
 Phe Leu Thr Ala Tyr Asp Lys Ala Tyr Ile Val Lys Thr Ile Gly Ser
 370 375 380
 Asn Leu Glu Asp Gly Ala Ser Leu Phe Ser Asp Lys Phe Phe Asp Met
 385 390 395 400
 Glu Val Val Val Pro Leu Arg Pro Tyr Gln Gln Ile Phe Asp Phe Leu
 405 410 415
 Ser Lys His Leu Leu Glu Gly Leu Asn Cys Glu Val Gly Asp Glu His
 420 425 430
 Arg Tyr Gln Thr Ala Leu Glu Lys His Phe Tyr Val Ile Lys Arg Tyr
 435 440 445
 Leu Ile Thr Leu Arg Asp Val Lys Arg Phe Leu Asn Leu Phe Ile Asn
 450 455 460
 Asp Tyr Lys Phe Val Lys Gly Glu Val Asn Phe Glu Asp Tyr Phe Leu
 465 470 475 480
 Leu Thr Ile Ile Lys Phe Lys Asp Ser Glu Glu Tyr Lys Glu Leu Gly
 485 490 495
 His Asn His Lys Asn Ile Ser Asn Glu Phe Gly Arg Tyr Cys Phe Asp
 500 505 510
 Asn Asn Gly Asp Glu Ile Lys Phe Ala Asp Ile Leu Asn Ile Leu
 515 520 525
 Phe Pro Pro Asn Phe Ser Ser Leu Glu Thr Asp Ser Glu Leu Arg Asp
 530 535 540
 Asn Phe Arg Arg Ile Asn Ser Thr Ala Ser Phe Asn Asn Tyr Phe Phe
 545 550 555 560
 Asn Arg Ile Tyr Asn Gln Leu Arg Leu Ser Asp Met Glu Glu Cys Leu
 565 570 575
 Arg Lys Asp Phe Met Met Ala Lys Leu Asp Ile Asp Asn Trp Ile Glu
 580 585 590
 Asn Asn Leu Ile Gly Gly Phe Val Glu Phe Leu Gln Gln Lys Asn Leu
 595 600 605
 Leu Cys Phe Asp Asn Lys Glu Arg Phe Ile Val Phe Met Gln Ile Val
 610 615 620
 Phe Tyr Leu Ser Leu Arg Leu Phe Asp Thr Glu Val Tyr Ile Leu Ile
 625 630 635 640
 Leu Arg Leu Val Thr Val Glu His Ile Lys Gln Phe Glu Gln Arg Tyr
 645 650 655
 Thr Phe Ser Gln Met Glu Tyr Lys Ile Leu Ile Ser Glu Ile Leu Asn
 660 665 670
 Glu Gly Tyr Pro Cys Phe His Tyr Arg Ile Ile Gln Lys Leu Ile Leu
 675 680 685
 Asn Leu Cys Asn Gly Glu Leu Val Phe Glu Ile Ile Tyr Thr Lys Glu
 690 695 700
 Glu Leu Ile Asn Ile Ala Arg Lys Leu Leu Lys Gly Tyr Ile Ser Glu
 705 710 715 720
 Asn Glu Thr Met Cys Asp Val His Met Asp Ile Leu Tyr Ser Cys Val
 725 730 735
 Lys Asp Val Asn Gln Glu Thr Arg Lys Val Thr Leu Asp Glu Asp Ser
 740 745 750
 Cys Leu Ala Val Arg Asn Leu Ile Phe Leu Ser Pro Gly Tyr Tyr Ile
 755 760 765
 Ser Thr Phe Val Arg Leu Gly Met Phe Ser Ser Asn Pro Asp Met Asn
 770 775 780
 Ser Ile Ala Cys Glu Pro Tyr Trp Lys Gln Ile Phe Gly Glu Ala Gln
 785 790 795 800
 Thr Phe Glu Thr Phe Ile Leu Gly Glu Thr Leu Asn Ser Ile Pro Glu
 805 810 815
 Ile Gln Arg Val Arg Asn Phe Trp Lys Leu Tyr Ser Asn Asn Asp Tyr

820 825 830
 Glu Pro Ile Pro Met Glu Arg Met Gly Asn Val Gln Lys Met Ile Asn
 835 840 845
 Asp Asn Leu Val Ile Leu Met Pro Leu Phe Glu Asn Ile Gln Ala Ile
 850 855 860
 Glu Arg Lys Phe Lys Glu Ile Gln Arg Asp Tyr Asp Val Ala Asn Pro
 865 870 875 880
 Gln Glu Ser Ile Asp Lys Cys Gln Leu Leu Lys Gln Lys Ile Gly Ala
 885 890 895
 Asp Gly Leu Phe Ile Ala Lys Asn Gly Gln Leu Ile Arg Gln Ile Asp
 900 905 910
 Gln Trp Ile Ser Gly Ile Ser Gly Ser Asn Asn Ala
 915 920

<210> 9234
 <211> 344
 <212> PRT
 <213> B.fragilis

<400> 9234
 Ser Gly Met Trp Ala Trp Gly Ile Phe Gly Thr Ile Asn Tyr Ala Thr
 1 5 10 15
 Thr Asp Glu Arg Phe Thr Ala Ser Leu Gly Val Arg Thr Asp Ala Asn
 20 25 30
 Asn Phe Ser Ser Gly Met Lys Gly Met Gly Asp Gln Leu Ser Pro Arg
 35 40 45
 Leu Ser Leu Ser Tyr Arg Leu Thr Asp Gly Leu Tyr Leu Ser Gly Asn
 50 55 60
 Ala Gly Leu Tyr Tyr Gln Leu Pro Pro Tyr Thr Gly Leu Gly Phe Lys
 65 70 75 80
 Asp Asn Asn Gly Ala Trp Val Asn Lys Tyr Leu Arg Tyr Met Ser Val
 85 90 95
 Ser Gln Glu Ser Leu Gly Leu Ser Trp His Pro Gly Asn Thr Phe Glu
 100 105 110
 Leu Ser Ala Glu Gly Phe Tyr Lys Gln Tyr Asp Lys Ile Pro Phe Ser
 115 120 125
 Ile Ala Asp Gly Ile Pro Leu Ala Cys Lys Gly Asn Asp Tyr Gly Val
 130 135 140
 Ile Gly Asn Glu Ala Leu Ser Ser Thr Ala Gln Gly Arg Ala Tyr Gly
 145 150 155 160
 Ile Glu Ile Leu Met Lys Trp Leu Ile Ala Lys Lys Leu Asn Leu Ala
 165 170 175
 Ser Ser Phe Thr Leu Phe Lys Ser Glu Tyr Arg Asn Asn Lys Gln Ser
 180 185 190
 Glu Tyr Ile Ala Ser Ala Trp Asp Asn Arg Tyr Ile Phe Asn Met Ser
 195 200 205
 Gly Thr Tyr Asn Phe Pro His Asn Trp Ser Leu Gly Met Lys Ile Ser
 210 215 220
 Cys Ile Gly Gly Ala Pro Tyr Thr Pro Tyr Asp Val Glu Lys Ser Ser
 225 230 235 240
 Leu Val Thr Ala Trp Asn Ala Gln Gly Arg Pro Tyr Tyr Asp Tyr Thr
 245 250 255
 Lys Tyr Asn Thr Gly Arg Leu Pro Ala Phe Gly Gln Leu Asp Val Arg
 260 265 270
 Val Asp Lys Thr Phe Tyr Leu Lys Arg Cys Met Leu Gly Phe Tyr Ile
 275 280 285
 Asp Leu Gln Asn Val Thr Asn Ser Lys Phe Lys Gln Pro Asp Ile Leu
 290 295 300
 Met Ser Thr Gly Val Ile Glu Asn Pro Ser Ala Pro Met Ala Glu Gln

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<400> 9237
Leu Glu Pro Arg Ser Ser Gly Arg Ala Asp Gln Val Ile Thr Ile Ile
1      5      10      15
Leu Pro Ser Lys Lys Arg Ile Asp Ile Leu Asn Gln Cys Ala Phe Ile
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20 25 30
 Leu Met Ile Phe Phe Gln Leu Cys Arg Thr Phe Ser Thr Thr Ala Phe
 35 40 45
 Gln Asp Ile Ile Tyr Thr Ser Tyr Ser Lys Ser Leu Gly
 50 55 60

<210> 9238
 <211> 173
 <212> PRT
 <213> B.fragilis

<400> 9238
 Lys Ser Lys Leu Leu Ser Ile Phe Val Asn Arg Leu Asn Ser Lys Ile
 1 5 10 15
 Asn Ser Met Ala Lys Glu Leu Asn Phe Thr Leu Glu Gly Val Gln Gly
 20 25 30
 Asp Leu Lys Leu Lys Tyr Gly Pro Phe Asn Gln Arg Leu Tyr Gln Asp
 35 40 45
 Gly Arg Glu Ile Lys Lys Gln Gly Arg Phe Asn Pro Lys Tyr Tyr Val
 50 55 60
 Ile Asn Thr Asn Gly Glu Lys Glu Glu Ile Lys Val Val Tyr Gly Phe
 65 70 75 80
 Asp Phe Val His Val Ala Val Phe Arg Gly Gln Lys Ile Asp Leu Glu
 85 90 95
 Glu Arg Leu Ser Ile Arg Glu Tyr Ile Val Gly Gly Leu Pro Val Leu
 100 105 110
 Leu Val Phe Leu Gly Gly Leu Ile Gly Ala Leu Phe Gly Ile Met Gly
 115 120 125
 Ala Thr Phe Asn Tyr Asn His Met Arg Gln Glu Lys Ser Phe Met Lys
 130 135 140
 Gln Leu Leu Val Ser Leu Gly Val Ser Ile Leu Cys Tyr Val Ala Tyr
 145 150 155 160
 Phe Ile Phe Ala Ile Gly Val Gln Leu Ile Val Ala Arg
 165 170

<210> 9239
 <211> 214
 <212> PRT
 <213> B.fragilis

<400> 9239
 Gln Lys Phe Ser Tyr Val Cys Ser Leu Ile Thr Met Glu Arg Arg Met
 1 5 10 15
 Ala Gln Thr Leu Thr Asn Leu Asn Ile Asn Asp Asn Asn Ala Val Ile
 20 25 30
 Ser Ala Leu Arg Glu Gly Asp Glu Glu Val Phe Asp His Ile Tyr Arg
 35 40 45
 Tyr Tyr Phe Arg Gly Leu Cys Ala Phe Cys Ser Gln Tyr Val Thr Leu
 50 55 60
 Ser Glu Ser Glu Glu Ile Val Gln Asp Thr Met Met Trp Leu Trp Glu
 65 70 75 80
 Asn Arg Lys Thr Leu Ile Pro Glu Leu Thr Leu Lys Thr Leu Leu Phe
 85 90 95
 Thr Ile Val Lys Asn Lys Ala Leu Asn Lys Ile Ser His Phe Glu Ile
 100 105 110
 Lys Arg Lys Val His Gln Glu Ile Ala Glu Lys Tyr Glu Thr Glu Phe
 115 120 125
 Ser Ser Pro Asp Phe Tyr Leu Glu Asn Glu Leu Phe Arg Leu Tyr Glu
 130 135 140

Glu Ala Leu Arg Lys Leu Pro Ala Glu Phe Arg Gln Ala Tyr Glu Met
 145 150 155 160
 Asn Arg Ser Leu Gln Met Thr His Lys Glu Ile Ala Glu Lys Leu Asn
 165 170 175
 Val Ser Pro Gln Thr Ile Asn Tyr Arg Ile Gly Gln Ala Leu Lys Ile
 180 185 190
 Leu Arg Ser Glu Leu Lys Asp Tyr Leu Pro Leu Ile Met Leu Phe Leu
 195 200 205
 Phe Leu Gln Gly His Lys
 210

<210> 9240

<211> 338

<212> PRT

<213> B.fragilis

<400> 9240

Asp Met Asn Arg His Leu Asn Phe Val Thr Leu Ile Cys Leu Ile Thr
 1 5 10 15
 Gly Phe Val Ser Leu Ala Ser Cys Ser Asn Asp Asp Asp Glu Met Asp
 20 25 30
 Lys Tyr Gln Lys Ile Tyr Ile Arg Thr Gly Val Ala Pro Gly Ala Glu
 35 40 45
 Met Gly Ala Ala Val Val Val Asp Cys Val Ser Asn Ser Ser Thr Ala
 50 55 60
 Asp Arg Ser Asp Phe Glu Ile Gln Leu Cys Ala Val Gln Pro Val Thr
 65 70 75 80
 Arg Asp Val Thr Ala Ala Leu Gly Val Asp Thr Leu Lys Val Asp Thr
 85 90 95
 Tyr Asn Ser Ala Asn Lys Thr Lys Cys Lys Leu Leu Pro Gln Asp Asn
 100 105 110
 Tyr Thr Ile Glu Thr Ser Glu Val Val Leu Lys Thr Gly Gln Thr Val
 115 120 125
 Ala Asp Ser Ser Phe Gln Val Val Leu Lys Asn Ile Glu Lys Leu Thr
 130 135 140
 Asn Pro Asp Gly Tyr Val Leu Pro Val Ala Leu Lys Gly Val Thr Gly
 145 150 155 160
 Met Asp Glu Gln Ala Val Ser Thr Ser Met Lys Thr Val Tyr Ile Arg
 165 170 175
 Ile Tyr Thr Ser Val Leu Tyr Thr Ser Tyr Thr Lys Pro Gly Asn Trp
 180 185 190
 Ser Ala Val Asp Arg Ser Ala Trp Ser Val Ser Cys Ser Asn Val Tyr
 195 200 205
 Ala Asp Asp Asp Ala Lys Tyr Gly Ala His Leu Ala Ile Asp Gly Glu
 210 215 220
 Ile Asn Thr Thr Trp Phe Thr Trp Gly Val Ala Asn Ala Gly Glu Cys
 225 230 235 240
 Trp Trp Asn Thr Val Leu Asp Arg Pro Val Thr Leu Thr Gly Phe Ser
 245 250 255
 Val Thr Lys Gln Ser Ala Tyr Gly Ser Gly Tyr Asn Leu Arg Ser Ala
 260 265 270
 Glu Ile Lys Val Arg Lys Glu Gly Glu Thr Glu Trp Val Thr Tyr Pro
 275 280 285
 Arg Val Leu Thr Phe Arg Asn Phe Lys Gly Ala Asp Pro Gln Tyr Ala
 290 295 300
 Ala Ile Glu Pro Pro Ile Pro Asn Val Lys Glu Phe Arg Ile Asn Cys
 305 310 315 320
 Leu Thr Pro Asp Asn Tyr Thr Gly Phe Ala Glu Ile Asn Leu Tyr Val
 325 330 335

Lys Gln

<210> 9241
 <211> 483
 <212> PRT
 <213> B.fragilis

<400> 9241

Ala	Asp	Asn	Arg	Arg	Phe	His	Gln	Gln	Ser	Lys	Ser	Asn	Phe	Lys	Asn
1				5					10					15	
Met	Ala	Thr	Lys	Ser	Ser	Ile	His	Ile	Lys	Pro	Cys	Arg	Val	Thr	Ser
		20						25					30		
Ser	Gly	Ala	His	Asn	Arg	Arg	Thr	Ala	Glu	Tyr	Met	Arg	Asn	Ile	Gly
		35					40					45			
Glu	Ser	Arg	Ile	Tyr	Ile	Val	Pro	Glu	Leu	Thr	Ser	Asn	Asn	Glu	Gln
		50				55					60				
Trp	Ile	Asn	Pro	Gly	Phe	Gly	Ser	Pro	Asp	Leu	Gln	Ala	His	Tyr	Asp
65					70					75					80
Ser	Ile	Lys	Arg	Met	Val	Lys	Glu	Lys	Thr	Gly	Arg	Ala	Met	Gln	Glu
				85					90					95	
Lys	Glu	Arg	Glu	Arg	Lys	Gly	Lys	Asn	Gly	Lys	Ile	Ile	Lys	Val	Ala
			100					105					110		
Gly	Cys	Ser	Pro	Ile	Arg	Glu	Gly	Val	Leu	Leu	Ile	Arg	Pro	Asp	Thr
		115					120						125		
Thr	Leu	Ala	Asp	Val	Arg	Lys	Phe	Gly	Glu	Glu	Cys	Gln	Arg	Arg	Trp
		130				135						140			
Gly	Ile	Thr	Pro	Leu	Gln	Ile	Phe	Leu	His	Lys	Asp	Glu	Gly	His	Trp
145					150					155					160
Leu	Ser	Gly	Gln	Pro	Lys	Thr	Gly	Asp	Arg	Glu	Ser	Phe	Gln	Val	Gly
				165					170					175	
Glu	Lys	Trp	Phe	Lys	Pro	Asn	Tyr	His	Ala	His	Ile	Val	Phe	Asp	Trp
			180					185					190		
Met	Asn	His	Asp	Thr	Gly	Lys	Ser	Gln	Lys	Leu	Asn	Asp	Asp	Asp	Met
		195					200					205			
Met	Glu	Met	Gln	Thr	Leu	Ala	Ser	Asp	Ile	Leu	Ser	Met	Gln	Arg	Gly
		210				215					220				
Gln	Ser	Lys	Ser	Glu	Thr	Gly	Lys	Glu	His	Leu	Glu	Arg	Asn	Asp	Phe
225					230					235					240
Ile	Ile	Glu	Lys	Gln	Arg	Ala	Glu	Leu	Gln	Arg	Met	Asp	Ala	Ala	Lys
				245					250					255	
Arg	His	Lys	Glu	Glu	Gln	Ile	Gly	Leu	Ala	Glu	Gln	Glu	Leu	Lys	Gln
			260					265					270		
Val	Lys	Ser	Glu	Ile	Arg	Thr	Asp	Lys	Leu	Lys	Lys	Thr	Ala	Thr	Asn
		275					280						285		
Ala	Ala	Thr	Ala	Ile	Ala	Ser	Gly	Val	Gly	Ser	Leu	Phe	Gly	Ser	Gly
		290				295					300				
Lys	Met	Lys	Glu	Leu	Glu	Arg	Thr	Asn	Glu	Asp	Leu	His	Gln	Glu	Ile
305					310					315					320
Ala	Lys	Arg	Asp	Lys	Gly	Ile	Asp	Thr	Leu	Lys	Ile	Gln	Met	Gln	Glu
				325					330					335	
Met	Gln	Glu	Arg	His	Gly	Lys	Gln	Ile	Arg	Asn	Leu	Gln	Ser	Ile	His
			340					345					350		
Asn	Gln	Glu	Leu	Glu	Ala	Lys	Asp	Arg	Glu	Ile	Ser	Arg	Leu	Asn	Thr
		355					360					365			
Leu	Leu	Glu	Lys	Ala	Phe	Lys	Trp	Phe	Pro	Met	Leu	Arg	Glu	Met	Leu
		370				375					380				
Arg	Met	Glu	Lys	Leu	Cys	Ala	Val	Ile	Gly	Phe	Thr	Lys	Asp	Met	Ile
385					390					395					400

Asp Cys Leu Leu Thr Arg Lys Glu Ala Ile Gln Cys Asn Gly Lys Ile
 405 410 415
 Tyr Ser Glu Glu His Arg Arg Lys Phe Glu Ile Lys Asn Asn Ile Phe
 420 425 430
 Lys Val Glu Lys Asn Pro Thr Asp Asp Ser Lys Leu Val Leu Thr Ile
 435 440 445
 Asn Arg Gln Pro Ile Ser Glu Trp Phe Lys Glu Gln Trp Glu Lys Leu
 450 455 460
 Arg Gln Gly Leu Arg Gln Pro Thr Glu Glu Pro Arg Lys Ser Arg Gly
 465 470 475 480
 Phe Lys Leu

<210> 9242
 <211> 65
 <212> PRT
 <213> B.fragilis

<400> 9242
 Ala Lys Ile Arg Asp Ile Lys Asn Ile Thr Gln Asp Tyr Asp Lys Lys
 1 5 10 15
 Leu Leu Ser Leu Phe Asn Asn Thr Thr His Pro Gly Lys Leu Leu Thr
 20 25 30
 Ser Ile Thr Leu Phe Leu Leu Asn Phe Ile Asn Thr Thr His Ala Lys
 35 40 45
 Lys His Arg Arg Leu Ser Ser Pro Met Pro Leu Ala Pro Leu Ser Thr
 50 55 60
 Ile
 65

<210> 9243
 <211> 137
 <212> PRT
 <213> B.fragilis

<400> 9243
 Leu Met Ala Ser Leu Lys Val Phe Ile Arg Lys Pro Gly Leu Thr Leu
 1 5 10 15
 Thr Ile Ser Leu Cys Arg His Thr Leu Thr Leu Ala Gly Asn Ser Asp
 20 25 30
 Ala Asn Leu Asp Arg Arg Leu Ala Gly Thr Ile Ala Asn Phe Lys Gly
 35 40 45
 Ile Leu Pro Pro Glu Lys Val Ala Asn Met Tyr Ile Val Thr Glu Asn
 50 55 60
 Phe Glu Ser Tyr Ala Pro Thr Gly Gly Gly Asp Tyr Val Asp Arg Tyr
 65 70 75 80
 Gly Asn Lys Met Arg Ala Leu Ala Gly Met Ala Arg Trp Thr Pro Thr
 85 90 95
 Ile Asp Gly Lys Gln Val Arg Lys Gly Gly Val Gly Thr Tyr His Met
 100 105 110
 Glu Tyr Asp Tyr Pro Gly Asp Ile Glu Tyr Lys Tyr Leu Arg Glu Ala
 115 120 125
 Ile Arg Ile Met Asn Pro Ala Val Lys
 130 135

<210> 9244
 <211> 327
 <212> PRT
 <213> B.fragilis

<400> 9244

Leu Pro Phe Gly Asn Phe Ser Phe Phe Pro Val Thr Tyr Leu Cys Ala
 1 5 10 15
 Gln Ile Leu Ile Leu Tyr Asp Met Lys Ser Leu Lys Gly Ile Ile Tyr
 20 25 30
 Ala Met Ile Ser Ser Gly Thr Phe Gly Leu Ile Pro Leu Phe Thr Ile
 35 40 45
 Pro Leu Met Gly Asn Met Glu Met Asn Glu Ser Asn Ile Leu Phe Tyr
 50 55 60
 Arg Phe Leu Phe Ser Thr Leu Met Met Gly Ala Val Cys Leu Leu His
 65 70 75 80
 Lys Ser Thr Leu Lys Ile Asn Met Lys His Leu Ile Ser Ile Ile Gly
 85 90 95
 Leu Gly Ala Leu Tyr Ala Leu Thr Ala Leu Phe Leu Ile Tyr Ser Tyr
 100 105 110
 His Tyr Ile Thr Ser Gly Val Ala Thr Thr Ile His Phe Leu Tyr Pro
 115 120 125
 Ile Cys Val Ser Phe Leu Met Val Val Phe Phe Lys Glu Gln Lys Ser
 130 135 140
 Lys Ser Leu Phe Leu Ala Ala Ser Leu Ser Leu Ile Gly Val Ala Leu
 145 150 155 160
 Met Cys Trp Ser Gly Gly Gly Ser Ile Arg Leu Met Gly Ile Gly Leu
 165 170 175
 Ala Ala Leu Thr Ile Leu Thr Tyr Gly Ile Tyr Ile Val Ala Leu Asn
 180 185 190
 Gln Leu Asp Ile Gly Lys Leu Pro Ala Glu Val Leu Thr Phe Tyr Val
 195 200 205
 Leu Leu Gly Gly Cys Val Ile Phe Phe Ile Tyr Ser Leu Phe Thr Ala
 210 215 220
 Gly Ile Ser Ser Ile Pro Ser Thr Lys Ala Gly Phe Tyr Ile Leu Ala
 225 230 235 240
 Leu Ala Phe Leu Ser Thr Val Ile Ser Asp Leu Thr Leu Ile Leu Ala
 245 250 255
 Val Lys Tyr Ala Gly Ser Thr Thr Thr Ala Ile Leu Gly Ser Met Glu
 260 265 270
 Pro Leu Val Ala Val Val Val Gly Val Leu Val Phe Ser Glu His Phe
 275 280 285
 Thr Leu Gln Ser Leu Ile Gly Leu Leu Leu Ile Leu Met Ser Val Ile
 290 295 300
 Ile Val Ile Leu Ala Asp Gln Gln Lys Lys Ser Lys Arg Ile Thr Glu
 305 310 315 320
 Gln Lys Ile Ile Lys Pro His
 325

<210> 9245

<211> 211

<212> PRT

<213> B.fragilis

<400> 9245

Ile Cys Phe Gly Lys Ser Ser Ala Leu Phe Ser Lys Lys Asn Ile Leu
 1 5 10 15
 Leu Ser Thr Met Pro Leu Ser Phe Gly Thr Arg Trp Pro Lys Glu Phe
 20 25 30
 Ala Ile Lys Met Val Pro Leu Phe Leu Lys Thr Ser Val Ala Gly Trp
 35 40 45
 Gly Leu Gly Leu Ser Thr Gln Asp Ile Gly Leu Val Tyr Gly Thr Phe
 50 55 60

Gly Ala Gly Ala Phe Ile Leu Gly Ser Leu Leu Ala Gly Tyr Tyr Ile
 65 70 75 80
 Ser Ala Phe Gly Leu Arg Lys Thr Leu Phe Ser Leu Cys Cys Ala Phe
 85 90 95
 Asn Ile Pro Phe Leu Val Tyr Phe Leu Leu Ala Leu Tyr Gln Pro Ser
 100 105 110
 Asp Leu Trp Ile Ile Gly Met Ala Ile Val Ser Glu Tyr Leu Gly Tyr
 115 120 125
 Gly Phe Gly Phe Val Gly Leu Met Leu Phe Met Met Gln Gln Val Ala
 130 135 140
 Pro Gly Lys His Gln Met Ala His Tyr Ala Phe Ala Thr Gly Ile Met
 145 150 155 160
 Asn Leu Gly Val Met Leu Pro Gly Met Met Ser Gly Tyr Leu Ser Asp
 165 170 175
 Trp Leu Gly Tyr Arg Asp Phe Phe Ile Trp Val Leu Ile Ala Thr Ile
 180 185 190
 Pro Ala Phe Ile Val Thr Trp Leu Val Pro Phe Thr Tyr Pro Asp Gly
 195 200 205
 Lys Lys Lys
 210

<210> 9246

<211> 301

<212> PRT

<213> B.fragilis

<400> 9246

Arg Glu Ala Gly Arg Gly Val Phe Val Leu Thr Leu Ser Ala His Ile
 1 5 10 15
 Thr Ile Glu Lys Gly Lys Ile Ile Glu Leu Ile Lys Ser Lys Arg Ile
 20 25 30
 Pro Ile Ile Glu Ile Ser Ser Leu Ser His Pro Gly Val Glu Ile Phe
 35 40 45
 Ser Thr Leu Thr Glu Ala Gln Leu Arg Asn Arg Ile Asp Ser Asp Arg
 50 55 60
 Gly Ile Phe Ile Ala Glu Ser Pro Lys Val Ile Gln Val Ala Leu Asp
 65 70 75 80
 Ala Gly Tyr Glu Pro Leu Ala Ile Leu Cys Glu Gln Lys His Ile Ile
 85 90 95
 Gly Asp Ala Ala Val Ile Ile Glu Arg Cys Gly Asp Ile Pro Val Tyr
 100 105 110
 Thr Gly Lys Arg Asp Ile Leu Ala Leu Leu Thr Gly Tyr Thr Leu Thr
 115 120 125
 Arg Gly Val Leu Cys Ala Met Arg Arg Pro Glu Leu Arg Ser Val Glu
 130 135 140
 Glu Val Cys Arg Glu Ala Lys Arg Ile Val Val Ile Asp Gly Val Val
 145 150 155 160
 Asp Thr Thr Asn Ile Gly Ala Ile Phe Arg Ser Ala Ala Ala Leu Gly
 165 170 175
 Ile Asp Ala Val Leu Leu Thr Arg Asn Ser Cys Asp Pro Leu Asn Arg
 180 185 190
 Arg Ala Val Arg Val Ser Met Gly Ser Ile Phe Leu Val Ser Trp Thr
 195 200 205
 Trp Ile Asp Gly Ser Leu Ser Arg Leu Gly Asp Leu Gly Phe Arg Thr
 210 215 220
 Ala Ala Met Ala Leu Thr Asp Asp Ser Ile Ser Ile Asp Asp Pro Val
 225 230 235 240
 Leu Lys Thr Glu Pro Lys Leu Ala Ile Ile Met Gly Thr Glu Gly Asp
 245 250 255

Gly Leu Pro Tyr Glu Thr Ile Ser Glu Ala Asp Tyr Val Val Arg Ile
 260 265 270
 Pro Met Ser His Ser Val Asp Ser Leu Asn Val Ala Ala Ala Ser
 275 280 285
 Val Ala Phe Trp Glu Leu Arg Ala Pro Thr Phe Lys Glu
 290 295 300

<210> 9247
 <211> 355
 <212> PRT
 <213> B.fragilis

<400> 9247

Ala Asp Arg Gly Leu Leu Asp Gly Arg Pro Phe Leu Tyr Ile Ile Phe
 1 5 10 15
 Met Tyr Thr Ile Asn Ile Ile Pro Arg Val Leu His Phe Lys Gln Pro
 20 25 30
 Ala Gly Thr Ser Arg Gly Ser Tyr Thr Thr Arg Asn Val Trp Tyr Ile
 35 40 45
 His Leu Ser Ser Ile Glu Cys Pro Gly Arg Val Gly Val Gly Glu Cys
 50 55 60
 Ala Pro Leu Pro Lys Leu Ser Cys Asp Asp Leu Pro Asp Tyr Glu Gln
 65 70 75 80
 Val Leu Arg Ser Ala Cys Gln Arg Leu Glu Gln Thr Gly Glu Leu Asp
 85 90 95
 Ile Glu Ser Leu Arg Gly Tyr Pro Ser Ile Leu Phe Gly Leu Glu Thr
 100 105 110
 Ala Leu Arg His Tyr Glu Thr Gln Ser Trp Ala Leu Trp Asp Thr Pro
 115 120 125
 Phe Ser Arg Gly Glu Ala Gly Ile Pro Ile Asn Gly Leu Ile Trp Met
 130 135 140
 Gly Ser Phe Asp Arg Met Leu Gln Gln Ile Glu Val Lys Met Gln Ala
 145 150 155 160
 Gly Tyr Arg Cys Ile Lys Leu Lys Ile Gly Ala Ile Asn Phe Glu Glu
 165 170 175
 Glu Leu Ala Leu Leu Arg His Ile Arg Ala His Tyr Ser Ala Arg Glu
 180 185 190
 Ile Glu Leu Arg Val Asp Ala Asn Gly Ala Phe Ser Pro Ala Asp Ala
 195 200 205
 Met Asp Lys Leu Asn Arg Leu Ala Glu Leu Asp Leu His Ser Ile Glu
 210 215 220
 Gln Pro Ile Arg Thr Gly Gln Trp Glu Glu Met Ala Arg Leu Ala Ala
 225 230 235 240
 Glu Ser Pro Leu Pro Ile Ala Leu Asp Glu Glu Leu Ile Gly Cys Asn
 245 250 255
 Ala Leu Glu Arg Lys Arg Glu Leu Leu Ala Ala Ile His Pro Arg Tyr
 260 265 270
 Ile Ile Leu Lys Pro Ser Leu His Gly Gly Ile Ser Gly Gly Asn Glu
 275 280 285
 Trp Ile Ala Glu Ala Glu Lys Gln His Ile Gly Trp Trp Ile Thr Ser
 290 295 300
 Ala Leu Glu Ser Asn Ile Gly Leu Asn Ala Ile Ala Gln Trp Cys Ala
 305 310 315 320
 Thr Phe Arg Asn Pro Leu Pro Gln Gly Leu Gly Thr Gly Leu Leu Phe
 325 330 335
 Thr Asp Asn Val Glu Met Pro Leu Glu Ile Arg Lys Asp Cys Leu Trp
 340 345 350
 Phe Cys Lys
 355

<210> 9248
 <211> 169
 <212> PRT
 <213> B.fragilis

<400> 9248

Ile Asp Met Gly Lys Glu Lys Asn Lys Ile Ala Val Leu Asn Asn Pro
 1 5 10 15
 Ile Glu His Ala Ile Lys Ile Ile Val Ala Leu Lys Cys Ala Met Thr
 20 25 30
 Pro Leu Thr Arg Asp Arg Leu Val Ala Tyr Glu Tyr Phe Ala Leu His
 35 40 45
 Leu Thr Asp Leu Asn Lys Asn Ala Glu Ser Leu Phe Pro Gln Ile Pro
 50 55 60
 Tyr Arg Ala Cys Thr Tyr Val Cys Asn His Thr Asp Ile Thr Met Ala
 65 70 75 80
 Leu Glu Ile Leu Leu Ser Arg Asp Leu Ile Lys Tyr Ala Ile Lys Asn
 85 90 95
 Asp Arg Leu Cys Tyr Thr Leu Thr Glu Ala Gly Ile Leu Phe Glu Glu
 100 105 110
 Tyr Leu Gln Asn Glu Tyr Lys Gln Arg Leu Thr Ile Met Met Val Glu
 115 120 125
 Val Val Ser Leu Leu Lys Asn Lys Ser Asp Ala Asp Ile Gln Glu Tyr
 130 135 140
 Val Glu Gln Asn Ile Gly Lys Trp Gly Ser Glu Phe Glu Arg Glu Tyr
 145 150 155 160
 Ile Leu Ile Lys Asp Val Asn His Gly
 165

<210> 9249
 <211> 191
 <212> PRT
 <213> B.fragilis

<400> 9249

Glu Thr Ile Met Glu Pro Ile Ile Asn Ser Gln Met Pro Glu Phe Lys
 1 5 10 15
 Val Gln Ala Phe Gln Asn Gly Ser Phe Lys Thr Val Ser Ser Glu Asp
 20 25 30
 Val Lys Gly Lys Trp Ala Ile Phe Phe Phe Tyr Pro Ala Asp Phe Thr
 35 40 45
 Phe Val Cys Pro Thr Glu Leu Val Asp Val Ala Glu Lys Tyr Glu Gln
 50 55 60
 Phe Gln Ala Met Gly Val Glu Val Tyr Ser Val Ser Thr Asp Ser His
 65 70 75 80
 Phe Val His Lys Ala Trp His Asp Ala Ser Glu Ser Ile Arg Lys Ile
 85 90 95
 Lys Tyr Pro Met Leu Ala Asp Pro Thr Gly Val Leu Ser Arg Gly Phe
 100 105 110
 Gly Val Met Ile Glu Glu Asp Gly Met Ala Tyr Arg Gly Thr Phe Leu
 115 120 125
 Val Asn Pro Glu Gly Lys Ile Lys Ile Ala Glu Ile Gln Asp Asn Asn
 130 135 140
 Ile Gly Arg Asn Ala Asp Glu Leu Leu Arg Lys Val Glu Ala Ala Gln
 145 150 155 160
 Phe Val Ala Thr His Asp Gly Glu Val Cys Pro Ala Lys Trp Lys Lys
 165 170 175
 Gly Glu Ala Thr Leu Lys Pro Ser Ile Asp Leu Val Gly Lys Ile

180

185

190

<210> 9250
 <211> 400
 <212> PRT
 <213> B.fragilis

<400> 9250

Lys Ser Ile Ile Met Arg Gln Thr Phe Ser Leu Leu Phe Phe Leu Lys
 1 5 10 15
 Lys Arg Gln Asn His Met Asp Gly Leu His Pro Ile Met Val Arg Ile
 20 25 30
 Thr Ile Asn Gly Lys Ser Val Glu Ile Cys Thr Gly Gln Lys Ala Leu
 35 40 45
 Leu Ala Asn Trp Ser Ile Arg Leu His Gln Cys Val Gly Ser Cys Ala
 50 55 60
 Lys Gln Thr Asn Leu Phe Leu Lys Ser Ile Arg Phe Arg Leu Asn Gln
 65 70 75 80
 Ile Phe Tyr Gln Gln Ser Leu Tyr Gly Glu Thr Thr Thr Pro Gln Lys
 85 90 95
 Ile Lys Asp Thr Phe Thr Gly Ala Asp Lys Lys Asn His Tyr Leu Leu
 100 105 110
 Ser Leu Phe Glu Leu His Asn Glu Ser Ile Arg Lys Gln Val Gly Ile
 115 120 125
 Ser Lys Ser Pro Thr Thr Phe Arg Lys Tyr Glu Thr Thr Arg Lys Tyr
 130 135 140
 Leu Gln Gly Tyr Leu Arg Ser Lys Cys Leu Glu Asp Ile Ile Leu Glu
 145 150 155 160
 Asn Ile Asn His Thr Phe Ile Cys Asp Phe Glu Val Tyr Leu Arg Val
 165 170 175
 Thr Ala His Cys Ala His Asn Thr Thr Ala Lys Phe Met Gln Phe Phe
 180 185 190
 Lys Arg Ile Ile Ile Leu Ala Leu Asn Asn Gly Tyr Ile Thr Lys Asn
 195 200 205
 Pro Phe Ser Glu Tyr Gln Ile Lys Leu Gln Lys Val Asp Arg Gly Tyr
 210 215 220
 Leu Thr Arg Glu Glu Leu Gln Arg Ile Lys Glu Lys Lys Ile Glu Ile
 225 230 235 240
 Lys Arg Leu Val Leu Val Arg Asp Leu Phe Leu Phe Ala Cys Tyr Thr
 245 250 255
 Gly Leu Ser Tyr Ile Asp Leu Lys Asn Leu Ser Lys His His Leu Tyr
 260 265 270
 Ile Ala His Asp Gly Asn Leu Trp Leu Arg Met Asn Arg Asn Lys Ser
 275 280 285
 Gly Glu Thr Ala Asn Val Tyr Leu Phe Asn Leu Pro Lys Thr Leu Ile
 290 295 300
 Ala Lys Tyr Glu Asn Pro Asp Ser Ile Tyr Leu Phe Pro Val Pro Ser
 305 310 315 320
 Asn Gln Lys Val Asn Ala Tyr Leu Lys Glu Ile Ala Asp Ile Cys Gly
 325 330 335
 Ile His Lys Asn Leu Thr Phe His Val Ala Arg His Thr Met Ala Thr
 340 345 350
 Thr Val Cys Leu Ala Asn Gly Val Pro Ile Glu Ser Leu Ser Lys Val
 355 360 365
 Leu Gly His Thr Asn Ile Lys Thr Thr Gln Leu Tyr Ala Lys Ile Thr
 370 375 380
 Asp Glu Lys Leu Ser Asn Asp Leu Ala Ile Leu Met Ser Lys Ile Asp
 385 390 395 400

<210> 9251
 <211> 445
 <212> PRT
 <213> B.fragilis

<400> 9251

Glu Pro Asn Ile Asp Phe Ile Met Glu Leu Tyr Arg Ser Ile Ile Glu
 1 5 10 15
 Asn Leu Lys Asn Trp Lys Ala Ser Pro Asp Arg Lys Pro Leu Ile Leu
 20 25 30
 Lys Gly Ala Arg Gln Thr Gly Lys Thr Trp Ile Leu Glu His Phe Gly
 35 40 45
 Arg Thr Glu Phe Glu His Val Ala Ser Phe Asn Phe Asp Lys Asp Glu
 50 55 60
 Ser Leu Asn Glu Ile Phe Glu Lys Thr Lys Val Pro Glu Arg Ile Ile
 65 70 75 80
 Ser Gln Leu Lys Leu His Thr Asp Ser Pro Ile Leu Pro Gly Lys Thr
 85 90 95
 Leu Ile Ile Phe Asp Glu Ile Gln Glu Cys Asn Lys Ala Leu Asn Ala
 100 105 110
 Leu Lys Tyr Phe Cys Glu Asp Ala Pro Glu Tyr Ile Val Val Ala Ala
 115 120 125
 Gly Ser Leu Leu Gly Val Thr Leu Ser Lys Gly Asp Ser Phe Pro Val
 130 135 140
 Gly Lys Val Glu Phe Met Asp Leu Tyr Pro Leu Thr Phe Arg Glu Phe
 145 150 155 160
 Leu Lys Val Asn Asp Glu Lys Ile Tyr Gln Tyr Ile Glu Glu Ile Ser
 165 170 175
 Met Ile Glu Pro Leu Pro Gln Ile Val Thr Asn Lys Leu Thr Glu Tyr
 180 185 190
 Tyr Arg Gln Tyr Leu Val Val Gly Gly Met Pro Ala Ala Val Lys Ala
 195 200 205
 Phe Met Glu Asn Lys Gly Met Glu Ala Val Lys Arg Glu Gln Arg Phe
 210 215 220
 Ile Leu Asp Ala Tyr Ala Leu Asp Phe Ser Lys His Ala Glu Ser Lys
 225 230 235 240
 Asp Ile Pro Arg Ile Met Asn Ile Trp Asn Ser Ile Pro Gly Gln Leu
 245 250 255
 Ala Lys Glu Asn Arg Lys Phe Ile Tyr Lys Met Val Lys Pro Gly Ala
 260 265 270
 Arg Ala Arg Asp Tyr Glu Asp Ala Leu Leu Trp Leu Glu Ser Ala Gly
 275 280 285
 Leu Ile His Arg Val Phe Cys Cys Ser Lys Pro Phe Leu Pro Leu Lys
 290 295 300
 Ser Tyr Asp Asp Leu Ser Ala Phe Lys Ile Tyr Leu Ser Asp Ile Gly
 305 310 315 320
 Leu Leu Arg Glu Leu Ala Gly Leu Pro Pro Glu Ala Ile Leu Ser Gly
 325 330 335
 Asn Val Val Tyr Thr Glu Phe Lys Gly Ala Leu Ala Glu Asn Tyr Val
 340 345 350
 Leu Gln Ser Leu Val Cys Gln Ile Glu Val Leu Pro Arg Tyr Trp Thr
 355 360 365
 Ser Leu Gly Lys Ala Glu Val Asp Phe Ile Ile Gln Leu Asn Met Asp
 370 375 380
 Ile Ile Pro Ala Glu Val Lys Ser Glu Thr Arg Leu Gly Gly Lys Ser
 385 390 395 400
 Leu Ser Val Tyr Asp Asp Asn Tyr Arg Pro Ala Tyr Lys Ile Arg Tyr
 405 410 415
 Ser Leu Asn Asn Leu Lys Met Asp Gly Asn Leu Ile Asn Ile Pro Leu

420 425 430
 Tyr Leu Ala Asp Trp Thr Val Lys Leu Val Ser Ile Gln
 435 440 445

<210> 9252
 <211> 337
 <212> PRT
 <213> B.fragilis

<400> 9252

Lys Thr Asn Met Met Thr Lys His Lys Met Asn Leu Phe Cys Gly Met
 1 5 10 15
 Leu Leu Leu Ser Ala Ser Leu Phe Val Glu Lys Ala Gln Ala Met Phe
 20 25 30
 Pro Glu Arg Tyr Val Ser Glu Glu Ser Ala Ala Arg Ala Asp Thr Ile
 35 40 45
 Asn Phe Arg Leu Ala Ser Ala Gly Glu Ala Lys Arg Leu Ile Ala Ala
 50 55 60
 Lys Asp Ser Tyr Thr Ala Asn Trp Ser Pro Phe Asp Ile Ala Ala Arg
 65 70 75 80
 Leu Glu Asn Pro Glu Gly Lys Arg Glu Asp Leu Val Ser Leu Ala Val
 85 90 95
 Arg Glu Val Arg Glu Trp Thr Ala Glu Glu Ala Gln Gln Ile Glu Gln
 100 105 110
 Ile Arg Lys Asn Leu Asn Asp Thr Ile Arg Lys Tyr Gly Tyr Arg Ile
 115 120 125
 Pro Phe Pro Lys Glu Ile Val Leu Val Lys Thr Thr Met Lys Asp Glu
 130 135 140
 Gly Gly Ala Gly Gly Tyr Thr Arg Ser Asn Trp Ile Ala Leu Thr Asp
 145 150 155 160
 Ala Thr Phe Gln Arg Gly Thr Glu Ala Ser His Thr Arg Leu Leu Val
 165 170 175
 His Glu Thr Phe His Ile Leu Thr Arg Leu Asn Pro Gly Phe Lys Lys
 180 185 190
 Lys Leu Tyr Arg Ala Ile Asp Phe Asn Ile Leu Pro Lys Glu Ile Glu
 195 200 205
 Phe Pro Glu Asp Ile Arg Lys Ser Arg Ile Ser Asn Pro Asp Val Ser
 210 215 220
 Arg Cys Asp Ser Tyr Ala Thr Phe Thr Ile Asp Gly Lys Pro Gln Asn
 225 230 235 240
 Cys Thr Met Ile Ile Tyr Thr Asn Arg Pro Tyr Thr Thr Gly Lys Phe
 245 250 255
 Tyr Gln Tyr Ile Asn Val Gly Leu Ile Pro Leu Asp Glu Ser Phe Lys
 260 265 270
 Pro Leu Arg Glu Ser Gly Lys Thr Val Ile Tyr Pro Leu Gln Lys Ala
 275 280 285
 Thr Asp Phe Phe Asp Lys Val Gly Arg Asn Thr Gly Tyr Val Ile Asp
 290 295 300
 Pro Glu Glu Val Leu Ala Asp Asn Phe Ala Ile Ala Leu Leu Asn Thr
 305 310 315 320
 Pro Asn Val His Thr Pro Glu Leu Gln Lys Lys Val Gln Glu Leu Leu
 325 330 335
 Lys

<210> 9253
 <211> 405
 <212> PRT
 <213> B.fragilis

<400> 9253

Leu Ala Asn Met Lys Ser Ile Lys Glu Leu Tyr Arg Ile Gly Thr Gly
 1 5 10 15
 Pro Ser Ser Ser His Thr Met Gly Pro Arg Lys Ala Ala Glu Met Phe
 20 25 30
 Leu Thr Arg His Pro Glu Ala Ala Ser Phe Lys Val Thr Leu Tyr Gly
 35 40 45
 Ser Leu Ala Ala Thr Gly Lys Gly His Met Thr Asp Val Ala Ile Ile
 50 55 60
 Asp Thr Leu Lys Pro Thr Ala Pro Val Asp Ile Ile Trp Gln Pro Lys
 65 70 75 80
 Ile Phe Leu Pro Phe His Pro Asn Gly Met Asn Phe Val Ala Leu Asp
 85 90 95
 Ala Gly Gly Asn Glu Leu Glu Asn Trp Thr Val Tyr Ser Val Gly Gly
 100 105 110
 Gly Ala Leu Ala Glu Asp Asn Lys Gln Pro Ser Ile Glu Ser Pro Glu
 115 120 125
 Val Tyr Ser Met Asn Ser Met Thr Glu Ile Leu Asp Trp Cys Glu His
 130 135 140
 Thr Gly Lys Ser Tyr Trp Glu Tyr Val Lys Glu Cys Glu Asp Pro Asp
 145 150 155 160
 Ile Trp Asp Tyr Leu Lys Glu Val Trp Asp Thr Met Lys Glu Ser Val
 165 170 175
 Gln Arg Gly Leu Glu Gln Glu Gly Val Leu Pro Gly Pro Leu Asn Leu
 180 185 190
 Arg Arg Lys Ala Ser Thr Tyr Tyr Ile Arg Ala Thr Gly Tyr Lys Ala
 195 200 205
 Ser Leu Gln Ser Arg Gly Leu Val Phe Ala Tyr Ala Leu Ala Val Ser
 210 215 220
 Glu Glu Asn Ala Ser Gly Gly Lys Ile Val Thr Ala Pro Thr Cys Gly
 225 230 235 240
 Ser Cys Gly Val Met Pro Ala Val Leu Tyr His Leu Ala Lys Ser Arg
 245 250 255
 Glu Phe Ser Glu Met Arg Ile Leu Arg Ala Leu Ala Thr Ala Gly Leu
 260 265 270
 Ile Gly Asn Ile Val Lys Gln Asn Ala Ser Ile Ser Gly Ala Glu Val
 275 280 285
 Gly Cys Gln Gly Glu Val Gly Val Ala Cys Ala Met Ala Ser Ala Ala
 290 295 300
 Ala Asn Gln Leu Phe Gly Gly Ser Pro Ala Gln Ile Glu Tyr Ala Ala
 305 310 315 320
 Glu Met Gly Leu Glu His His Leu Gly Met Thr Cys Asp Pro Val Cys
 325 330 335
 Gly Leu Val Gln Ile Pro Cys Ile Glu Arg Asn Ala Tyr Ala Ala Ala
 340 345 350
 Arg Ala Leu Asp Ala Asn Leu Tyr Ser Ser Phe Thr Asp Gly Met His
 355 360 365
 Arg Val Ser Phe Asp Lys Val Ile Gln Val Met Lys Gln Thr Gly His
 370 375 380
 Asp Leu Pro Ser Leu Tyr Lys Glu Thr Ser Glu Gly Gly Leu Ala Lys
 385 390 395 400
 Asp Tyr Lys Pro Met
 405

<210> 9254

<211> 250

<212> PRT

<213> B.fragilis

<400> 9254

Thr Asn Asp Met Asp Asn Phe Lys Val Ile Tyr Ser Ile Pro Phe Leu
 1 5 10 15
 Phe Phe Ile Ile Val Ser Cys Ser Asn Ser Ser Thr Glu Met Val Ala
 20 25 30
 Lys Ser Lys Tyr Asp Ala Lys Ile Ala Glu Tyr Lys Glu Leu Asn Glu
 35 40 45
 Gln Gln Ala Ala Val Ile Glu Asp Asn Leu Glu Lys Ser Lys Ile Ile
 50 55 60
 Asn Asn Val Val Thr Glu Leu Asn Gln Ile Ala Gly Asn Thr His Ser
 65 70 75 80
 Leu Arg Val Asn Val Glu His Gly Val Gly Glu Leu Ser Gln Ala Glu
 85 90 95
 Glu Ile Asn Gln Lys Leu Gln Thr Leu Lys Lys Arg Leu Ser Ala Val
 100 105 110
 Glu Gly Lys Arg Ser Asp Gly Ser Lys Asn Leu Leu Ala Thr Met Asp
 115 120 125
 Lys Leu Lys Ser Ile Ile Glu Gln Lys Glu Ile Glu Ile Asn Asn Leu
 130 135 140
 Lys Gln Glu Ile Ala Asn Gln Gln Gln Thr Ile Ala Asn Gln Lys Asn
 145 150 155 160
 Thr Ile Ala Ser Gln Gln Val Thr Ile Asp Ala Gln Ser Gln Glu Leu
 165 170 175
 Met Asn Lys Gln Gln Glu Met Trp Tyr Lys Leu Gly Thr Glu Leu His
 180 185 190
 Ser Val Val Glu Glu Leu Pro Lys Val Lys Gly Arg Lys Asp Lys Arg
 195 200 205
 Asn Ile Lys Asn Thr Arg Tyr Tyr Ile Leu Asn Lys Ala Lys Glu Cys
 210 215 220
 Phe Glu His Ala Ala Gln Leu Gly His Ser Leu Ala Gly Ser Lys Ala
 225 230 235 240
 Arg Gln Val Glu Gly Glu Met Ser Arg Leu
 245 250

<210> 9255

<211> 592

<212> PRT

<213> B.fragilis

<400> 9255

Leu Thr Ile Ile Tyr Ile Val Asn Leu Thr Gly Phe Tyr Met Lys Lys
 1 5 10 15
 Thr Ser Leu Phe Leu Ser Phe Phe Ile Ala Leu Phe Leu Phe Ser Ala
 20 25 30
 Cys Thr Asp Asp Thr Glu Gln Cys Leu Tyr Ser Pro Lys Val Phe Asp
 35 40 45
 Thr Gly Asn Leu Leu Ser Asn Arg Val Lys Glu Glu Phe Leu Asn Phe
 50 55 60
 Asp Tyr Pro Ala Gly Ile Val Pro Ile Leu Phe Ala Val Asp Ser Ile
 65 70 75 80
 Glu Ala Ile Gln Met Gly Ala Tyr Ala Asp Glu Cys Phe Asn Asp Leu
 85 90 95
 Val Asp Ser Ile Ser Glu Ser Arg Asp Phe Lys His Arg Gly Met Leu
 100 105 110
 Val Leu Val Ser Lys Asn Pro Lys Leu Ile Gln Ile Arg Leu Gly Asn
 115 120 125
 Arg Tyr Arg Val Tyr Cys Asn Met Thr Gly Ala Thr Ser Gly Leu Asp
 130 135 140

Tyr Leu Asp Leu Gln Lys Gln Ile Gln Glu Arg Gly Val Glu Glu Thr
 145 150 155 160
 Leu Pro Leu Phe Leu Gln Asn Thr Ser Val Arg Ile Gln Glu Leu Asn
 165 170 175
 Glu Leu Pro Ser Tyr Lys Lys Tyr Arg Ile Asn Ser Ala Ile Ser Val
 180 185 190
 Ile Ser Thr Cys Leu Glu Tyr Ile Gly Thr Pro Ser Glu Asn Phe Tyr
 195 200 205
 Gly Lys Cys Val Leu Thr Pro Ile Leu Lys Ile Thr Ser Phe Gly Tyr
 210 215 220
 Tyr Ile Phe Lys Ser Trp Leu Leu Thr Phe Met Phe Val Cys Leu Ile
 225 230 235 240
 Met Leu Leu Cys Arg Trp Met Ile Phe Leu Leu Val Lys Arg Leu Leu
 245 250 255
 Gly Glu Asn Val Ile Ala Leu Met Trp Thr Gln Lys Ile Ile Asn Trp
 260 265 270
 Gly Leu Gly Leu Leu Phe Ser Ile Ser Ala Ala Ala Ser Ala Ile Ile
 275 280 285
 Leu Ser Ser Gly Arg Met Glu Asp Ala Ile Ala Leu Gln Ala Ile Gly
 290 295 300
 Ile Pro Phe Met Glu Asn Phe Gln Ile Ala Ala Ala Asp Tyr Val Leu
 305 310 315 320
 Lys Thr Ser Phe Val Ala Ala Phe Phe Phe Val Leu Met Tyr Ala Leu
 325 330 335
 Lys Arg Asn Ile Val Ser Asp Ile Phe Leu Met Ser Leu Leu Glu Pro
 340 345 350
 Ala Lys Gln Gln Glu Val Tyr Arg Ser Leu Ser Asp Ala Gln Lys Thr
 355 360 365
 Ala Leu Val Ile Gly His Glu Ala Asp Leu Asn Glu Val Glu Thr Ser
 370 375 380
 Ser Glu Pro Tyr Ser Glu Leu Phe Thr Ser Arg Val Ser Lys Gln Glu
 385 390 395 400
 Thr Val Thr Ile Val Ser Leu Ala Ile Ala Ala Leu Phe Leu Ile Pro
 405 410 415
 Arg Pro Leu Ile Ile Met Gly Ile Ala Leu Thr Ile Tyr Pro Leu Val
 420 425 430
 Gly Gln Cys Val Lys Ile Tyr His Val Val Ser Asn His Thr Leu Pro
 435 440 445
 Ala Gln Ile Lys Gly Asp Arg Arg Arg Ala Leu Ile Thr Asn Leu Leu
 450 455 460
 Ile Ile Phe Ala Ile Ala Phe Ile Thr Val Leu Ile Gly Leu Phe Phe
 465 470 475 480
 Asn Pro Met Pro Asp Lys Lys Glu Ile Asp Arg Asn Glu Ile Lys Met
 485 490 495
 Glu Leu Ile Ala Pro Asp Arg Leu Glu Gly Asn Tyr Thr Val Ser Lys
 500 505 510
 Ser Ile Val Gly Gln Ile Gln Val Ser Ser Gly Ile Ile Lys Lys Val
 515 520 525
 Lys Asp Gly Thr Phe Gln Leu Leu Ile Thr Gly Lys Ser Ser Pro Lys
 530 535 540
 Val Tyr Lys Leu Asp Phe Asn Ser Asp Lys Met Ile Phe Val Ser Gly
 545 550 555 560
 Glu Leu Gly Asn Gly Ala Ile His Tyr Asp Lys Asp Leu Asp Lys Ile
 565 570 575
 Lys Ile Val Phe Asn Ile Asn Glu Gln Thr Thr Trp Thr Ile Ser Lys
 580 585 590

<210> 9256

<211> 512

<212> PRT

<213> B.fragilis

<400> 9256

Leu Thr Thr Met Ser Asn Arg Ile Val Ser Arg Ser Leu Met Gly Ala
 1 5 10 15
 Leu Cys Ser Ala Cys Phe Thr Thr Ala Ser Ala Gln Glu Arg Pro Asn
 20 25 30
 Ile Ile Val Phe Leu Val Asp Asp Met Gly Leu Met Asp Thr Ser Val
 35 40 45
 Pro Phe Val Thr Asp Glu Asn Gly Asn Ala Gln Arg Gln Pro Leu Asn
 50 55 60
 Asp Trp Tyr Arg Thr Pro Asn Met Glu Arg Leu Ala Asn Gln Gly Ile
 65 70 75 80
 Arg Phe Ser Thr Phe Tyr Ala Gln Ser Val Ser Ser Pro Ser Arg Ala
 85 90 95
 Ser Ile Met Thr Gly Gln Asn Ala Ala Arg His Arg Thr Thr Asn Trp
 100 105 110
 Ile Asn Ala Glu Ser Asn Asn Arg Thr Pro Tyr Gly Pro Phe Asp Trp
 115 120 125
 Asn Trp Lys Gly Leu Thr His Gln Asp Met Ile Tyr Pro Tyr Leu Leu
 130 135 140
 Gln Gln Ala Gly Tyr Gln Thr Ile His Val Gly Lys Ala His Phe Gly
 145 150 155 160
 Cys Leu Lys Ser Glu Gly Glu Asn Pro Ala Asn Leu Gly Phe Asp Val
 165 170 175
 Asn Ile Ala Gly Ser Ala Ile Gly His Pro Gly Ser Tyr His Gly Glu
 180 185 190
 Asn Gly Tyr Gly Trp Ile Lys Gly Gln Arg Ala Arg Ala Val Pro Asp
 195 200 205
 Leu Glu Gln Tyr His Lys Thr His Thr Phe Leu Ser Asp Ala Leu Thr
 210 215 220
 Leu Glu Ala Asp Lys Glu Ile Glu Lys Ala Val Ala Glu Lys Lys Pro
 225 230 235 240
 Phe Tyr Leu Asn Met Ala His Tyr Ala Val His Ser Pro Phe Glu Thr
 245 250 255
 Asp Glu Arg Phe Ile Ser His Tyr Thr Asp Pro Asn Lys Ser Gln Gln
 260 265 270
 Ala Arg Ala Phe Ala Thr Leu Ile Glu Gly Met Asp Lys Ser Leu Gly
 275 280 285
 Asp Ile Leu Asp Lys Leu Glu Asp Met Gly Ile Ala Glu Asn Thr Leu
 290 295 300
 Ile Ile Phe Leu Gly Asp Asn Gly Gly Asp Ala Pro Leu Gly Asp Ala
 305 310 315 320
 Ala Asp Tyr Gly Ser Ser Ala Pro Phe Lys Gly Lys Lys Gly Ser Glu
 325 330 335
 Tyr Glu Gly Gly Val Arg Val Pro Phe Ile Val Ser Trp Ala His Pro
 340 345 350
 Asn Pro Asn Asn Lys Phe Gln Lys Ala Tyr Pro Ile Ala Arg Asn Ala
 355 360 365
 Ile Gln Thr Gln Met Gly Thr Val Met Asp Ile Tyr Pro Thr Val Leu
 370 375 380
 Ser Val Ala Gly Val Lys Pro Ala Pro Asn His Ile Leu Asp Gly Ala
 385 390 395 400
 Asp Leu Arg Lys Leu Leu Lys Gly Lys Arg Asp Lys Lys His Arg Asp
 405 410 415
 Asp Phe Leu Met His Phe Pro His Glu His Arg Gly Ser Tyr Phe Thr
 420 425 430
 Ser Tyr Arg Lys Gly Asp Trp Lys Phe Ile Tyr Tyr Tyr Asn Pro Gln

435 440 445
 Thr Pro Glu Ala Pro Thr Tyr Lys Leu Phe Asn Leu Ser Glu Asp Pro
 450 455 460
 Tyr Glu Lys Asn Asp Leu Ser Lys Thr Asn Gln Gln Lys Ala Lys Glu
 465 470 475 480
 Leu Phe Arg Leu Met Val Gln Arg Leu Glu Lys Glu Gln Ala Leu Tyr
 485 490 495
 Pro Val Asp Ala Asp Lys Asn Val Leu Ser Pro Ile Phe Val Ala Glu
 500 505 510

<210> 9257

<211> 336

<212> PRT

<213> B.fragilis

<400> 9257

Phe Asn Arg Ile Met Glu Glu Ile Lys Ile Ala Gly Ala Ala Leu Pro
 1 5 10 15
 Ala Met Pro Trp Glu Glu Arg Pro Ala Gly Cys Lys Asp Val Val Trp
 20 25 30
 Arg Cys Ser Ala Asn Pro Ile Ile Pro Arg Asp Leu Leu Pro Thr Ser
 35 40 45
 Asn Ser Ile Phe Asn Ser Ala Val Val Pro Phe Lys Asp Gly Tyr Ala
 50 55 60
 Gly Val Phe Arg Cys Asp Thr Asn Arg Arg Met Arg Leu His Val
 65 70 75 80
 Gly Phe Ser Lys Asp Ala Val His Trp Asp Ile Asn Glu Glu Pro Leu
 85 90 95
 Lys Phe Gln Cys Asp Asp Ala Glu Val Gly Thr Trp Val Tyr Gly Tyr
 100 105 110
 Asp Pro Arg Val Cys Phe Ile Glu Asp Arg Tyr Tyr Val Thr Trp Cys
 115 120 125
 Asn Gly Tyr His Gly Pro Thr Ile Gly Val Ala Tyr Thr Tyr Asp Phe
 130 135 140
 Val Thr Phe His Gln Leu Glu Asn Ala Phe Ile Pro Phe Asn Arg Asn
 145 150 155 160
 Gly Val Leu Phe Pro Arg Lys Ile Asn Gly Arg Phe Ala Met Leu Ser
 165 170 175
 Arg Pro Ser Asp Asn Gly His Thr Pro Phe Gly Asp Ile Phe Tyr Ser
 180 185 190
 Glu Ser Pro Asp Met Glu Phe Trp Gly Arg His Arg His Val Met Ser
 195 200 205
 Pro Ala Pro Phe Glu Asp Ser Ala Trp Gln Cys Thr Lys Ile Gly Ala
 210 215 220
 Gly Pro Ile Pro Ile Glu Thr Ser Glu Gly Trp Leu Leu Ile Tyr His
 225 230 235 240
 Gly Val Leu Ala Ser Cys Asn Gly Phe Val Tyr Ser Phe Gly Ser Ala
 245 250 255
 Leu Leu Asp Ile Asp Gln Pro Trp Lys Val Lys Phe Arg Ser Gly Pro
 260 265 270
 Tyr Leu Ile Ser Pro Gln Lys Asp Tyr Glu Cys Met Gly Asp Val Pro
 275 280 285
 Asn Val Cys Phe Pro Cys Ala Ala Leu His Asp Ser Glu Thr Gly Arg
 290 295 300
 Ile Ala Ile Tyr Tyr Gly Cys Ala Asp Thr Val Thr Gly Leu Ala Phe
 305 310 315 320
 Gly Tyr Ile Pro Glu Ile Ile Glu Phe Thr Lys Arg Thr Ser Ile Ile
 325 330 335

<210> 9258
 <211> 679
 <212> PRT
 <213> B.fragilis

<400> 9258

Ile Ser Leu Ile Leu Phe Pro Ile Glu Phe Cys Asn Phe Val Ala Leu
 1 5 10 15
 Glu Asn Tyr Tyr Leu Cys Ile Ile Asn Leu Ile Val Asp Trp Ile Met
 20 25 30
 Gly His Cys Lys Cys Glu Met Asn Ala Asn Val Arg Val Glu Ser Cys
 35 40 45
 Gln Glu Ala Asn Gly Phe Ile Lys Glu Tyr Trp Lys Val Ile Leu Ser
 50 55 60
 Leu Leu Met Leu Ile Ala Gly Ala Ile Met Asn Gln Leu Asp Val Ala
 65 70 75 80
 Phe Phe Arg Asp Asn Thr Ile Ser Leu Val Trp Tyr Ile Leu Ala Tyr
 85 90 95
 Leu Pro Val Gly Leu Pro Val Ile Lys Glu Ala Trp Glu Ser Ile Leu
 100 105 110
 Gln Lys Asp Phe Phe Ser Glu Phe Thr Leu Met Ser Val Ala Thr Leu
 115 120 125
 Gly Ala Phe Tyr Ile Gly Glu Tyr Pro Glu Gly Val Ala Val Met Leu
 130 135 140
 Phe Tyr Ser Val Gly Glu Leu Phe Gln Asp Lys Ala Ile Asp Lys Ala
 145 150 155 160
 Lys Arg Asn Ile Ser Ala Leu Leu Asp Val Arg Pro Glu Lys Ala Val
 165 170 175
 Val Val Arg Ser Asn Glu Ile Val Thr Val Asp Pro Arg Ser Val Leu
 180 185 190
 Ile Asn Glu Ile Ile Glu Ile Lys Ala Gly Glu Arg Val Pro Leu Asp
 195 200 205
 Gly Val Met Leu Asp Glu Val Ala Ala Phe Asn Thr Ala Ala Leu Thr
 210 215 220
 Gly Glu Ser Val Pro Arg Asp Ile Ser Arg Gly Glu Glu Val Leu Ala
 225 230 235 240
 Gly Met Ile Val Thr Asp Lys Val Ile Arg Met Lys Val Thr Lys Pro
 245 250 255
 Phe Asp Lys Ser Ala Leu Ala Arg Ile Leu Glu Leu Val Glu Asp Ala
 260 265 270
 Ser Glu Arg Lys Ala Pro Ala Glu Leu Phe Ile Arg Lys Phe Ala Arg
 275 280 285
 Val Tyr Thr Pro Ile Val Ile Gly Phe Ala Phe Leu Ile Val Leu Ile
 290 295 300
 Pro Tyr Ile Tyr Ser Phe Ile Asn Pro Leu Phe Gly Phe Val Phe Asn
 305 310 315 320
 Asp Trp Leu Tyr Lys Ala Leu Val Phe Leu Val Ile Ser Cys Pro Cys
 325 330 335
 Ala Leu Val Ile Ser Ile Pro Leu Gly Tyr Phe Gly Gly Ile Gly Ala
 340 345 350
 Ala Ser Arg Leu Gly Ile Leu Phe Lys Gly Gly Asn Tyr Leu Asp Ala
 355 360 365
 Ile Thr Arg Val Asn Thr Val Val Phe Asp Lys Thr Gly Thr Leu Thr
 370 375 380
 Lys Gly Val Phe Glu Val Glu Ser Cys Arg Val Val Pro Gly Thr Ser
 385 390 395 400
 Glu Glu Asp Leu Leu Arg Val Val Ala Ser Ile Glu Lys Asn Ser Asn
 405 410 415
 His Pro Ile Ala Arg Ala Ile Val Ala Tyr Ala Gln Asp Lys Gly Ile

420 425 430
 Asp Leu Ile Val Thr Lys Asn Ile Glu Glu Ile Ala Gly Tyr Gly Leu
 435 440 445
 Met Thr Glu Ile Asp Gly Lys Arg Val Leu Val Gly Asn Thr Arg Leu
 450 455 460
 Leu Ser Lys Tyr Ser Ile Glu Phe Pro Lys Ala Val Phe Ser Ile Thr
 465 470 475 480
 Glu Thr Thr Val Val Cys Ala Val Gly Asp Lys Tyr Ile Gly Cys Ile
 485 490 495
 Ile Leu Ser Asp Val Leu Lys Asp Asp Ala Ser Asp Thr Val Lys Ala
 500 505 510
 Leu Lys Glu Leu Asn Ile Lys Asn Ile Gln Ile Leu Ser Gly Asp Lys
 515 520 525
 Gln Ser Ile Val Thr Ile Phe Ala Asn Lys Leu Gly Ile Thr Gln Ala
 530 535 540
 Tyr Gly Asp Leu Leu Pro Glu Gly Lys Val Glu His Ile Glu Arg Leu
 545 550 555 560
 Lys Glu Glu Lys Gly Asn Gln Ile Ala Phe Val Gly Asp Gly Met Asn
 565 570 575
 Asp Ala Pro Val Leu Ala Leu Ser Asp Val Gly Ile Ala Met Gly Gly
 580 585 590
 Leu Gly Ser Asp Ala Ala Ile Glu Thr Ala Asp Val Val Ile Gln Thr
 595 600 605
 Asp Gln Pro Ser Lys Val Ala Thr Ala Ile Lys Val Gly Arg Cys Thr
 610 615 620
 Arg Arg Ile Ile Trp Gln Asn Val Leu Leu Ala Phe Gly Val Lys Leu
 625 630 635 640
 Leu Val Leu Ile Leu Gly Ala Ser Gly Ile Ala Thr Leu Trp Glu Ala
 645 650 655
 Val Phe Ala Asp Val Gly Val Thr Leu Ile Ala Ile Met Asn Ala Val
 660 665 670
 Arg Ile Gln Lys Met Ile Lys
 675

<210> 9259
 <211> 171
 <212> PRT
 <213> B.fragilis

<400> 9259
 Lys Lys Thr Leu Ile Met Lys Phe Leu Lys Phe Ser Leu Leu Thr Ala
 1 5 10 15
 Val Leu Leu Ser Val Val Phe Ala Phe Ser Ser Cys Gly Asp Asp Asp
 20 25 30
 Asp Thr Gly Tyr Leu Pro Pro Ser Gln Ala Ile Gln Asp Ala Leu Lys
 35 40 45
 Lys Leu Tyr Pro Asn Ala Thr Ala Ile Lys Trp Glu Gln Lys Gly Val
 50 55 60
 Tyr Tyr Val Ala Asp Cys Gln Ala Asp Gly Arg Glu Lys Glu Val Trp
 65 70 75 80
 Phe Asp Ala Asn Ala Asn Trp Leu Met Thr Glu Thr Glu Leu Asn Ser
 85 90 95
 Ile Asn Asn Leu Pro Pro Ala Val Leu Thr Ala Phe Met Glu Ser Ser
 100 105 110
 Tyr Asn Asn Trp Val Val Asp Asp Val Val Ile Leu Glu Tyr Pro Asn
 115 120 125
 Glu Pro Ser Thr Glu Phe Val Val Thr Val Glu Gln Gly Lys Lys Val
 130 135 140
 Asp Leu Tyr Phe Ser Glu Gly Gly Gly Leu Leu His Glu Lys Asp Val


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145              150              155
Thr Asn Gly Asp Asp Thr His Trp Pro Arg Ile
              165              170

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<210> 9260
<211> 422
<212> PRT
<213> B.fragilis
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<400> 9260

Asn	Arg	Met	Met	Lys	Glu	Asp	Glu	Lys	Trp	Ile	Lys	Ala	Phe	Lys	Asp
1				5					10					15	
Lys	Leu	Glu	Asp	Tyr	Ser	Glu	Pro	Met	Pro	Ala	Ser	Gly	Trp	Glu	Arg
			20					25					30		
Leu	Glu	Arg	Glu	Leu	Met	Pro	Val	Thr	Glu	Lys	Arg	Ile	Tyr	Pro	Tyr
			35				40					45			
Arg	Arg	Trp	Ala	Val	Ala	Ala	Ala	Ala	Val	Val	Leu	Val	Leu	Thr	Thr
						55					60				
Ala	Val	Ser	Leu	Tyr	Phe	Leu	Asn	Ser	Pro	Val	Ala	Asp	Glu	Ile	Arg
65					70					75					80
Tyr	Ala	Thr	Ala	Pro	Ser	Leu	Ala	Val	Asn	Pro	Asp	Val	Leu	Pro	Glu
				85					90					95	
Pro	Ala	Leu	Pro	Asp	Val	Gln	Val	Ala	Val	Ser	Glu	Pro	Val	Lys	Pro
			100					105					110		
Val	Gly	Thr	Thr	Ser	Ile	Asn	Pro	Val	Ser	Gly	Tyr	Leu	Ala	Lys	Asn
			115				120					125			
Thr	Asp	Pro	Val	Ile	Val	Pro	Glu	Val	Ser	Ser	Leu	Val	Glu	Lys	Arg
						135					140				
Pro	Glu	Ala	Val	Thr	Glu	Glu	Lys	Arg	Ser	Glu	Pro	Gln	Gln	Glu	Ala
145					150					155					160
Ile	Ala	Ala	Ile	Glu	Lys	Lys	Glu	Ser	Ala	Thr	Ala	Gln	Pro	Pro	Lys
				165					170					175	
Arg	Lys	Glu	Ala	Arg	Arg	Pro	Ser	Gly	Lys	Asp	Lys	Tyr	Gln	Leu	Pro
			180					185					190		
Ile	Gly	Asp	Ser	Ser	Ala	Lys	Arg	Gly	Gly	Lys	Trp	Ser	Met	Gly	Val
			195				200					205			
Gly	Ile	Gly	Asn	Gly	Gly	Gly	Leu	Pro	Thr	Asn	Gly	Ser	Glu	Asn	Phe
						215					220				
Ala	Pro	Arg	Pro	Met	Thr	Asn	Arg	Val	Asp	Leu	Met	Thr	Ile	Met	Asn
225					230					235					240
Gly	Ala	Val	Ser	Ile	Pro	Ala	Asp	Gln	Glu	Val	Ile	Phe	Glu	Glu	Gly
				245					250					255	
Val	Pro	Tyr	Leu	Lys	Ser	Asn	Thr	Thr	Ala	Val	Val	Asp	Tyr	Glu	His
			260					265					270		
His	Gln	Pro	Val	Ser	Phe	Gly	Leu	Ser	Val	Arg	Lys	Ser	Leu	Pro	Lys
			275				280					285			
Gly	Phe	Ser	Val	Glu	Thr	Gly	Leu	Thr	Tyr	Thr	Leu	Leu	Ser	Ser	Asp
						295					300				
Ile	Lys	Arg	Gln	Gly	Asp	Thr	Lys	Met	Gln	Ser	Gln	Lys	Leu	His	Tyr
305					310					315					320
Ile	Gly	Ile	Pro	Val	Arg	Gly	Asn	Trp	Asn	Phe	Leu	Glu	Lys	Lys	Tyr
				325					330					335	
Phe	Thr	Leu	Tyr	Val	Ser	Ala	Gly	Gly	Met	Val	Glu	Lys	Cys	Val	Tyr
			340					345					350		
Gly	Lys	Leu	Ala	Asp	Asp	Lys	Val	Asn	Val						

385 390 395 400
 Val Gln Thr Ile Arg Lys Glu Arg Pro Cys Asn Phe Asn Leu Gln Ala
 405 410 415
 Gly Leu Arg Phe Thr Tyr
 420

<210> 9261
 <211> 518
 <212> PRT
 <213> B.fragilis

<400> 9261

Asn Gln Ser Ile Met Lys Lys Lys Ile Leu Asn Ile Val Leu Ala Ala
 1 5 10 15
 Ala Val Thr Pro Phe Leu Cys Cys Cys Thr Asp Asn Phe Glu Glu Tyr
 20 25 30
 Asn Thr Asn Pro Tyr Glu Pro His Ser Leu Asn Pro Pro Met Leu Phe
 35 40 45
 Ala Thr Met Ile Thr Thr Gly Ile Asn Val Gln Gln Asn Asp Asn Gln
 50 55 60
 Met Ile Asp Gln Met Val Ala Gly Pro Phe Ser Gly Tyr Leu Thr Met
 65 70 75 80
 Ala Asn Ser Trp Gly Gly Ser Asn Phe Asn Thr Phe Asn Gln Thr Glu
 85 90 95
 Ser Trp Asn Gln Ile Pro Phe Asn Thr Pro Phe Glu Lys Phe Tyr Cys
 100 105 110
 Asn Tyr Phe Lys Leu Glu Thr Ala Thr Gly Gly Lys Gly His Tyr Trp
 115 120 125
 Ala Met Ala Lys Leu Leu Arg Val Asn Thr Met Leu Arg Val Thr Asp
 130 135 140
 Cys Tyr Gly Pro Ile Pro Tyr Ser Gln Val Ala Asn Gly Lys Thr Ala
 145 150 155 160
 Val Ala Tyr Asp Ser Gln Glu Asp Val Tyr Lys His Met Phe Glu Asp
 165 170 175
 Leu Asp Tyr Ala Ile Gln Met Leu Gly Glu Phe Val Asp Glu Val Gly
 180 185 190
 Gly Leu Lys Pro Leu Glu Gly Tyr Asp Pro Val Tyr Asn Gly Asp Tyr
 195 200 205
 Asn Lys Trp Met Arg Phe Ala Asn Ser Leu Lys Leu Arg Leu Ala Val
 210 215 220
 Arg Ile Ser Asn Val Ser Pro Glu Leu Ala Arg Thr Lys Ala Glu Glu
 225 230 235 240
 Ala Val Lys Ser Thr Arg Gly Leu Ile Asp Thr Asn Asp Asn Asn Ala
 245 250 255
 Tyr Val Gly Val Gly Ala Glu Pro Asn Pro Leu Trp Leu Val Ala Ser
 260 265 270
 Ser Trp Gly Glu Ile Arg Ile Asn Ala Thr Ile Ala Ser Tyr Met Lys
 275 280 285
 Gly Tyr Ser Asp Pro Arg Ser Ala Val Tyr Phe Thr Thr Ser Lys Leu
 290 295 300
 Gly Gly Asp Ser Pro Tyr Met Gly Met Arg Ser Gly Leu Glu Gly Val
 305 310 315 320
 Lys Pro Ala Thr Tyr Ser Gly Tyr Ser Met Pro Asn Tyr Glu Gln Lys
 325 330 335
 Asp Asp Met Leu Met Phe Cys Ala Ala Glu Thr Ala Phe Leu Arg Ala
 340 345 350
 Glu Gly Ala Leu Arg Gly Trp Asp Met Gly Gly Ser Ala Arg Asp Phe
 355 360 365
 Tyr Glu Gln Gly Val Lys Leu Ser Phe Asp Gln Arg Lys Val Ser Gly

370 375 380
 Ala Asp Glu Tyr Leu Ala Asn Ala Val Ala Val Pro Glu Pro Phe Val
 385 390 395 400
 Asp Pro Val Asn Pro Ala Lys Cys Asn Tyr Thr Pro Lys Thr Lys Ile
 405 410 415
 Thr Ile Ala Trp Asn Glu Gly Ala Ser Thr Glu Glu Lys Leu Glu Arg
 420 425 430
 Ile Ile Thr Gln Lys Trp Ile Ala Asn Phe Pro Leu Gly Phe Glu Gly
 435 440 445
 Trp Ala Asp Tyr Arg Arg Thr Gly Tyr Pro Glu Val Phe Pro Ser Val
 450 455 460
 Ser Asn Leu Ser Asn Gly Val Ile Asp Thr Asn Arg Gln Leu Arg Arg
 465 470 475 480
 Leu Pro Phe Pro Leu Ser Glu Lys Gln Gly Asn Ser Ala Asn Val Ser
 485 490 495
 Ala Ala Val Ser Met Leu Gly Gly Pro Asp Thr Gly Ala Thr Asp Leu
 500 505 510
 Trp Trp Ala Lys Lys Asn
 515

<210> 9262
 <211> 148
 <212> PRT
 <213> B.fragilis

<400> 9262
 Ile Glu Lys Met Lys Thr Val Lys Leu Ile Thr Cys Asp Asp Ala Phe
 1 5 10 15
 Gln Ala His Ile Ile Gln Gly Ala Leu Ala Asn Glu Gly Ile Asp Ser
 20 25 30
 Leu Leu His Asn Glu Asn Met Ser Thr Leu Leu Arg Gly Phe Val His
 35 40 45
 Asp Ile Ser Arg Val Asp Val Leu Val Ala Asp Cys Asp Tyr Glu Ala
 50 55 60
 Ala Ile Gln Leu Leu Lys Gln Asn Gln Met Ile Pro Glu Glu Gln Lys
 65 70 75 80
 Phe Cys Pro Phe Cys Gly Ser Asp Arg Ile Lys Phe Val Leu Lys Lys
 85 90 95
 Glu His Arg Val Arg Ala Val Ser Ala Ala Ile Val Ser Met Leu Ala
 100 105 110
 Thr Val Pro Pro Gly Gly Asn His Trp Glu Tyr Ile Cys Asp His Cys
 115 120 125
 Gly Lys Ala Phe Glu Lys Pro Val Thr Glu Phe Asn Pro Ser Ala Leu
 130 135 140
 Glu Glu Lys Asp
 145

<210> 9263
 <211> 380
 <212> PRT
 <213> B.fragilis

<400> 9263
 Arg Tyr Gly Ile Tyr Arg Lys Glu Leu Leu Ile Arg Lys Ser Ile Asp
 1 5 10 15
 Leu Pro Thr Leu Pro Cys Pro Lys Lys Arg Tyr Thr Met Lys Val Lys
 20 25 30
 Leu Leu Phe Leu Val Phe Val Leu Tyr Ala Cys Gly Thr Lys Thr Val
 35 40 45

Ser Glu Glu Lys Ser Tyr Asp Arg Ile Thr Met Thr Thr Tyr Glu Asn
 50 55 60
 Lys Tyr Asp Glu Asn Asn Arg Leu Ser Glu Val Gln Leu Thr Arg Thr
 65 70 75 80
 Ser His His Arg Tyr Glu Glu Asp Ser Glu Thr Ile Asp Leu Ile Asp
 85 90 95
 Asp Lys Ser Thr Tyr Tyr Tyr Thr Tyr Ile Asn Asn Glu Glu Phe Thr
 100 105 110
 Val Arg Arg Lys Ser Lys Arg Ser Gly Asn Ile Lys Ile Met Arg Tyr
 115 120 125
 Ala Pro Gln Arg Glu Glu Val Leu Thr Leu Asn Ala Gln Gly Asp Thr
 130 135 140
 Ile Asp Tyr Leu Leu Gln Lys Tyr Tyr Asp Lys Ser Lys Leu Lys Leu
 145 150 155 160
 Val Tyr Val Arg Asn Ile Asn Asn Asp Tyr Val Leu His Glu Asp Asn
 165 170 175
 Asp Tyr Glu Glu Lys Asn Glu Tyr Asp Gly Asn Gly Asn Leu Thr Lys
 180 185 190
 Arg Val Gln Tyr Tyr Phe Asp Ile Gly Lys Lys Arg Thr Thr Tyr Phe
 195 200 205
 Phe Arg Gly Leu Ser Tyr Glu Glu Ala Lys Lys Arg Ile Pro Arg Thr
 210 215 220
 Asp Glu Asp Tyr Asp Ile Val Cys Asp Ile Glu Lys Met Ala Gly Asp
 225 230 235 240
 Thr Leu Ile Arg Lys Cys Ile Lys Asn Gly Ile Val Ser Ser Ile Asn
 245 250 255
 Lys Thr Ile Val Asp Glu Lys Gly Lys Lys Glu Phe Ile Phe Asp Ala
 260 265 270
 Asp Met Lys Phe Thr Gly Ser Phe Thr Glu Phe Lys Ser Asp Gly Phe
 275 280 285
 Asp Ile His Val Asp Arg Ile Val Leu Asp Asp Cys Thr Asp Ile Asp
 290 295 300
 Ser Thr Tyr Tyr Lys Asn Gly Lys Glu Val Arg Cys Val Tyr Leu Ser
 305 310 315 320
 Asp Thr Ser Lys Arg Ile Val Leu Ser Lys Tyr Asp Lys Trp Gly Asn
 325 330 335
 Met Val Glu Arg Val Glu Lys Thr Lys Tyr Phe Tyr Ser Gln Asp Gly
 340 345 350
 Glu Ala Leu Ile Asn Glu Met Leu Gln Val Val Arg Glu Asn Glu Lys
 355 360 365
 Lys Lys Glu Ser Arg Lys Arg Leu Lys Ile Ser Lys
 370 375 380

<210> 9264

<211> 90

<212> PRT

<213> B.fragilis

<400> 9264

Leu Ile Asn Phe Asp Asn Val Cys Cys Ser Leu Lys Ser Asn Val Gln
 1 5 10 15
 Ala Asn Gly Leu Tyr Lys Arg Pro Gln Leu Leu His Leu Gln Leu Asp
 20 25 30
 Thr Gly Gly Val Val Met Thr Ser Ala Gln Val Ala Glu Gln Ile Lys
 35 40 45
 Ser Ile Phe Pro Leu Phe Tyr Ile Gln Gly Arg Ser Ser Arg Val Ile
 50 55 60
 Ile Asp Leu Arg Cys Ser Ser Phe Phe Ile Met Gln Thr Asp Met Leu
 65 70 75 80

Tyr Thr Lys Lys Arg Lys Ser Leu Asn Tyr
85 90

<210> 9265
<211> 189
<212> PRT
<213> B.fragilis

<400> 9265
Gly Lys His Val Phe Arg Arg Met Asn Glu Leu Glu Leu Ser Glu Arg
1 5 10 15
Cys Arg Gln Gly Asp Asn Arg Ala Arg Lys Glu Leu Tyr Glu Gln Tyr
20 25 30
Ala Gly Arg Met Leu Gly Val Cys Leu Arg Tyr Ala Gly Asp Arg Asp
35 40 45
Met Ala Gln Asp Leu Val His Asp Gly Phe Leu Lys Ile Phe Asp Ser
50 55 60
Phe Asp Lys Phe Thr Trp Arg Gly Glu Gly Ser Leu Arg Ala Trp Met
65 70 75 80
Glu Arg Val Met Val Asn Thr Ala Leu Gln Phe Leu Arg Lys Asn Asp
85 90 95
Val Met Asn Gln Thr Thr Ala Leu Asp Glu Val Pro Glu Thr Tyr Glu
100 105 110
Glu Pro Asp Ala Ser Ala Val Glu Ala Ile Pro Gln Lys Val Leu Met
115 120 125
Gln Phe Ile Asn Glu Leu Pro Ala Gly Tyr Arg Thr Val Phe Asn Leu
130 135 140
Tyr Thr Phe Glu Asp Lys Ser His Lys Glu Ile Ala Gln Met Leu Gly
145 150 155 160
Ile Asn Glu Lys Ser Ser Ala Ser Gln Leu Phe Arg Ala Lys Ser Val
165 170 175
Leu Ala Lys Lys Val Lys Glu Trp Leu Val Thr Asn Gly
180 185

<210> 9266
<211> 241
<212> PRT
<213> B.fragilis

<400> 9266
Met Ile Asn Val His Ser Tyr Glu Ser Met Gly Thr Phe Asp Gly Pro
1 5 10 15
Gly Leu Arg Leu Val Val Phe Leu Gln Gly Cys Asn Phe Arg Cys Leu
20 25 30
Tyr Cys Ala Asn Pro Asp Thr Ile Glu Ala Lys Gly Gly Thr Ala Thr
35 40 45
Asp Pro Glu Glu Ile Val Arg Met Ala Val Ser Gln Lys Ala Phe Phe
50 55 60
Gly Lys Lys Gly Gly Ile Thr Phe Ser Gly Gly Glu Pro Thr Phe Gln
65 70 75 80
Ala Lys Ser Leu Ile Pro Leu Phe Lys Arg Leu Lys Glu Ala Gly Ile
85 90 95
His Ile Cys Leu Asp Thr Asn Gly Gly Leu Trp Asn Asn Asp Val Glu
100 105 110
Glu Leu Leu Glu Leu Thr Asp Leu Val Leu Leu Asp Ile Lys Glu Phe
115 120 125
Asn Pro Glu His His Gln Ser Leu Thr Gly Arg Ser Asn Glu Gln Thr
130 135 140
Leu Lys Thr Ala Ala Trp Leu Glu Thr Asn His Lys Pro Phe Trp Leu

145 150 155 160
 Arg Tyr Val Leu Val Pro Gly Tyr Ser Asp Phe Glu Asp Asp Ile Arg
 165 170 175
 Gln Leu Gly Glu His Leu Gly Thr Tyr Gln Met Ile Gln Arg Val Glu
 180 185 190
 Ile Leu Pro Tyr His Thr Leu Gly Val His Lys Tyr Glu Ala Met Asn
 195 200 205
 Lys Glu Tyr Met Leu Lys Gly Val Lys Glu Asn Thr Pro Glu Gln Ile
 210 215 220
 Glu Lys Ala Glu Lys Leu Phe Arg Gln Tyr Phe Arg Thr Val Gln Val
 225 230 235 240
 Asn

<210> 9267
 <211> 387
 <212> PRT
 <213> B.fragilis

<400> 9267

Leu Ile Val Val Asn Thr Lys Val Ile Leu Leu Asn Gln Phe Thr Met
 1 5 10 15
 His Thr Asp Leu Lys Pro Ile Asn Lys Asp Ala Ser Asn His Val Leu
 20 25 30
 Thr Asn Leu Glu Lys Leu Glu Lys Lys Thr Ala Glu Glu Arg Leu Lys
 35 40 45
 Phe Met Asp Glu Asp Arg Tyr Glu Glu Met Ile Thr Lys Trp Ala Tyr
 50 55 60
 Phe Cys Leu Lys Glu Asp Ser Asn Lys Lys Tyr Glu Asp Val Phe Arg
 65 70 75 80
 Tyr Gly Gly Ser Gly Asp Gly Gly Ile Asp Val Ile Ala Phe Tyr Asp
 85 90 95
 Phe Lys Asn Gln Ile Cys Asp Ile Tyr Gln Cys Lys His Tyr Lys Asp
 100 105 110
 Ser Ile Gly Tyr Ser Asp Ile Asn Lys Glu Leu Cys Lys Phe Leu Tyr
 115 120 125
 Asn Thr Phe Ile Asp Tyr Ile Pro Phe Pro Lys Thr Tyr Tyr Leu Val
 130 135 140
 Ala Pro Gln Asn Ile Thr Gly Pro Leu Gly Ser Leu Phe Asn Asp His
 145 150 155 160
 Glu Lys Leu Arg Asn Arg Leu Trp Glu Asp Trp Glu Lys Ser Ile Lys
 165 170 175
 Lys Lys Leu Ala Val Asn Ile Thr Asn Asp Glu Asn Asp Lys Phe Lys
 180 185 190
 Lys His Val Asp Thr Phe Asp Leu Ser Ile Ile Lys Pro Leu Ser Pro
 195 200 205
 Asp Lys Ile Ile Glu Gly Leu Arg Lys Glu Tyr Trp Leu Tyr Phe Gln
 210 215 220
 Tyr Leu Gly Ile Asp Arg Thr Leu Ile Pro Arg Ile His Ala Ala Pro
 225 230 235 240
 Pro Ser Thr Val Ala Asp Tyr Glu Ser Thr Tyr Ile Asn His Leu Val
 245 250 255
 Asp Ala Tyr Ser Asp Ala Asn Lys Ser Ser Ile Thr Gln Ile Asn Leu
 260 265 270
 Asn Asp Glu Asn Met Ala Met Tyr Lys Ala His Phe Thr Ala Ser Arg
 275 280 285
 Glu Gln Phe Tyr Leu Ala Glu Ser Ala Ala Met Ile Gly Lys Glu Ile
 290 295 300
 Cys Ser Gly Gly Asn Asp Glu Tyr Ser Glu Ile Lys Asp Asn Ile Glu

305 310 315 320
 Glu His Val Ile Asp Glu Tyr Tyr Ser Gln Tyr His Thr Asp Gly Phe
 325 330 335
 Glu Lys Val Lys Ala Val Thr Lys Ser Ala Ser Gln Tyr Gln Val Glu
 340 345 350
 Glu Met Asn Ser Val Lys Pro Ile Ile Ser Ser Arg Val Leu Lys Gly
 355 360 365
 Met Cys Phe Gln Leu Ser Asn Glu Asn Lys Leu Ile Trp Val Lys Lys
 370 375 380
 Lys Ile Lys
 385

<210> 9268
 <211> 135
 <212> PRT
 <213> B.fragilis

<400> 9268
 Thr Phe Ser Val Phe Met Gly Tyr Phe Ile Lys Ile Gly Leu Gly Met
 1 5 10 15
 Thr Glu Ile Lys Ile Lys Arg Val Tyr Glu Asp Pro Ser Asp Thr Asp
 20 25 30
 Gly Tyr Arg Val Leu Val Asp Arg Leu Trp Pro Arg Gly Met Lys Lys
 35 40 45
 Glu His Leu Lys Tyr Asp Tyr Trp Ala Lys Glu Leu Thr Pro Ser Ser
 50 55 60
 Asp Leu Arg Lys Trp Phe His Asp Asp Val Pro Gly His Trp Lys Glu
 65 70 75 80
 Phe Ala Glu Met Tyr Arg Lys Glu Leu Glu Thr Ser Asp Lys Thr Ser
 85 90 95
 Glu Phe Leu Ser Arg Ile Arg Ser Cys Glu Ser Val Thr Leu Leu Tyr
 100 105 110
 Ala Ser Lys Glu Pro Val Tyr Asn His Ala Arg Ile Leu Gln Ala Phe
 115 120 125
 Leu Glu Glu Arg Leu Lys Lys
 130 135

<210> 9269
 <211> 348
 <212> PRT
 <213> B.fragilis

<400> 9269
 Ile Asn Ser Phe Met Leu Ser Glu Lys Arg Asn Ser Met Leu His Gly
 1 5 10 15
 Val Leu Leu Ile Ala Leu Phe Ser Cys Ala Ala Phe Tyr Ile Gly Asp
 20 25 30
 Met Glu Phe Ile Lys Lys Leu Ser Phe Ser Pro Met Ile Val Gly Ile
 35 40 45
 Ile Leu Gly Met Leu Tyr Ala Asn Ser Leu Arg Asn Asn Leu Pro Glu
 50 55 60
 Thr Trp Val Pro Gly Ile Gln Phe Cys Ser Lys Arg Ile Leu Arg Ile
 65 70 75 80
 Gly Ile Ile Leu Tyr Gly Phe Lys Leu Thr Phe Gln Asp Val Leu Ala
 85 90 95
 Val Gly Leu Pro Ala Ile Leu Ile Asp Thr Ile Val Val Thr Ile Thr
 100 105 110
 Ile Leu Gly Gly Ile Leu Ile Gly Arg Met Leu Lys Met Asp Arg Gly
 115 120 125

Val Ala Leu Leu Thr Ser Ile Gly Ser Gly Ile Cys Gly Ala Ala Ala
 130 135 140
 Ile Leu Gly Ala Glu Ser Thr Ile Gln Thr Lys Pro Tyr Lys Thr Ala
 145 150 155 160
 Val Ala Val Ser Thr Val Val Ile Phe Gly Thr Leu Ser Met Phe Ile
 165 170 175
 Tyr Pro Ile Leu Tyr Arg Asn Gly Thr Phe Val Leu Ser Pro Asn Glu
 180 185 190
 Met Gly Ile Phe Thr Gly Ala Thr Leu His Glu Val Ala His Thr Val
 195 200 205
 Gly Ala Gly Asn Ala Met Gly Lys Glu Val Ser Asp Val Ala Ile Ile
 210 215 220
 Val Lys Met Ile Arg Val Met Met Leu Val Pro Val Leu Leu Ile Thr
 225 230 235 240
 Ser Phe Met Val Ser Arg Ala Ala Val Lys Ala Gly Gly Gln Gly Gly
 245 250 255
 Ser Met Lys Asp Ile Ser Ile Pro Trp Phe Ala Ile Gly Phe Leu Ala
 260 265 270
 Val Ile Gly Phe Asn Ser Phe Asp Leu Leu Pro Gln Ser Leu Ile Ala
 275 280 285
 Phe Ile Asn Asn Leu Asp Thr Phe Leu Leu Thr Met Ala Met Thr Ala
 290 295 300
 Leu Gly Ala Glu Thr Ser Ile Asp Lys Phe Lys Lys Ala Gly Ala Lys
 305 310 315 320
 Pro Phe Val Leu Ala Ser Leu Leu Tyr Leu Trp Leu Ile Val Gly Gly
 325 330 335
 Tyr Phe Leu Val Lys Leu Leu Ala Pro Val Leu Met
 340 345

<210> 9270

<211> 351

<212> PRT

<213> B.fragilis

<400> 9270

Ser Pro Lys Leu Lys Ser Met Ala Gly Glu Ile Asn Lys Leu Ile Pro
 1 5 10 15
 Gln Tyr Gly Glu Leu Asn Arg Ile Tyr Asn Asp Trp Val Thr Asn Tyr
 20 25 30
 Ala Phe Ser Phe Asp Lys Gln Lys Phe Ile Thr Asp Phe Tyr Arg Gln
 35 40 45
 His Asn Asp Thr Lys Ala Phe Glu Ala Ala Ile Leu Glu Leu Val Leu
 50 55 60
 Asp Lys Gln Lys Glu Gln Tyr Thr Leu Ile Leu Asn Ser Leu Lys Ile
 65 70 75 80
 Glu Ile Glu Lys Asn Ile Arg Ala Tyr Glu Thr Lys Pro Leu Asn Asp
 85 90 95
 Asp Val Ile Lys Arg Val Cys Phe His Tyr Ala Asp Arg His Asn Ser
 100 105 110
 Ala Ile Lys Asp Gln Leu Glu Ile Thr Thr Lys Leu His Glu Pro Leu
 115 120 125
 Asn Asp Ala Tyr His Arg Tyr Asp Phe Ile Gly Phe Arg Glu His Thr
 130 135 140
 Asp Glu Glu Glu Ile Gln Ala Glu Lys Glu Tyr Glu Arg Cys Lys Ala
 145 150 155 160
 Glu Tyr Asp Lys Glu Lys Lys Glu Leu Asp Lys Leu Tyr Glu Leu Gln
 165 170 175
 Lys Gln Asp Arg Lys Glu Ala Phe Gln Tyr Ile Glu Asn Leu Ser Gly
 180 185 190

Asn Val Tyr Arg Leu Ser Leu Leu Phe Met Glu Val Leu Lys Lys Tyr
 195 200 205
 Leu Pro Asn Asp Arg Glu Glu Lys Gln Gln Asp Glu Pro Val Lys Gln
 210 215 220
 Asn Glu Gln Glu Glu Val Gln Asn Ser Pro Glu Gly Gln His Glu Tyr
 225 230 235 240
 Phe Asp Met Lys Gln Leu Ser Pro Ile His Glu Thr Cys Val Gly Glu
 245 250 255
 Gln Phe Glu Ala Ile Thr Ile Ala Asp Phe Tyr Ala Asn Ile Asn Leu
 260 265 270
 Tyr Pro Cys Lys Asn Lys Leu Lys Ile Lys Ala Arg Glu Lys Ile Arg
 275 280 285
 Val Cys Tyr Leu Ile Phe Leu Met Ser Glu Lys Leu Ser Lys Gln Tyr
 290 295 300
 Arg Asp Glu Trp Arg Ser Gln Ile Leu Lys Leu Leu Asp Ile Asp Glu
 305 310 315 320
 Ser Tyr Tyr Arg Ser Lys Tyr Lys Glu Pro Val Ser Asp Phe Pro Ser
 325 330 335
 Asp Ser Asn Gln Lys Phe Ala Lys Glu Met Glu Ser Ile Phe Gly
 340 345 350

<210> 9271
 <211> 63
 <212> PRT
 <213> B.fragilis

<400> 9271
 Ser Gly Tyr Ser Phe Ile Ser Val Phe Cys Tyr Pro Leu Ile His Tyr
 1 5 10 15
 Thr Thr Phe Phe Phe Thr Phe Phe Tyr Ile Ser Val Ile Asp Leu Arg
 20 25 30
 Ser Thr Leu Phe Lys Arg Phe Ser Val Val Val Ile Cys Glu Ile Tyr
 35 40 45
 Thr Asn Gly Trp Leu Phe Phe Lys Glu Thr Ile Asn Gly Asn Gly
 50 55 60

<210> 9272
 <211> 189
 <212> PRT
 <213> B.fragilis

<400> 9272
 Thr Asp Asn Ser Asn Met Lys Lys Leu Ile Tyr Leu Leu Gly Leu Ala
 1 5 10 15
 Met Leu Met Ala Val Ala Ala Cys Ser Gly Ser Ala Glu Lys Lys Lys
 20 25 30
 Ser Asp Ile Arg Val Leu Met Gln Asp Ser Thr Asp Ala His Gly Val
 35 40 45
 Gln Arg Met Thr Ala Arg Lys Ser Glu Val Asp Ile Lys Tyr Lys Gly
 50 55 60
 Lys Glu Tyr His Ser Phe Ile Ser Arg Thr Pro Asn Asp Ser Leu Pro
 65 70 75 80
 Arg Val Val Ser Gln Met Gly Asn Thr Tyr Val Asp Asn Gln Ile Val
 85 90 95
 Leu Arg Leu Thr Arg Gly Asn Glu Arg Val Phe Ser Arg Thr Phe Thr
 100 105 110
 Lys Lys Gln Phe Glu Ser Leu Ile Gly Asp Asp Phe Met Ala Lys Ser
 115 120 125
 Ile Leu Glu Gly Ile Val Tyr Asp Lys Thr Thr Pro Glu Gly Ile Val

130		135		140	
Tyr	Ala	Ala	Ser	Ile	Cys
145		150		155	
Ser	Ile	Thr	Ile	Ser	Pro
		165		170	
Leu	Leu	Glu	Glu	Val	Tyr
		180		185	

<210> 9273
 <211> 367
 <212> PRT
 <213> B.fragilis

<400> 9273

Phe	Leu	Asn	Ser	His	Phe	Met	Lys	Thr	Thr	Pro	Phe	Thr	Glu	Lys	His
1				5					10					15	
Ile	Ala	Leu	Gly	Ala	Lys	Met	His	Glu	Phe	Ala	Gly	Tyr	Asn	Met	Pro
		20						25					30		
Ile	Glu	Tyr	Ser	Gly	Ile	Ile	Asp	Glu	His	Leu	Thr	Val	Cys	Asn	Ser
		35					40					45			
Val	Gly	Val	Phe	Asp	Val	Ser	His	Met	Gly	Glu	Phe	Trp	Val	Lys	Gly
	50					55					60				
Pro	His	Ala	Leu	Asp	Phe	Leu	Gln	Lys	Val	Thr	Ser	Asn	Asn	Val	Ala
65				70					75						80
Ala	Leu	Val	Pro	Gly	Lys	Ile	Gln	Tyr	Thr	Cys	Phe	Pro	Asn	Glu	Asp
				85					90					95	
Gly	Gly	Ile	Val	Asp	Asp	Leu	Leu	Val	Tyr	Gln	Tyr	Glu	Leu	Glu	Lys
			100					105					110		
Tyr	Leu	Leu	Val	Val	Asn	Ala	Ser	Asn	Ile	Glu	Lys	Asp	Trp	Asn	Trp
		115				120						125			
Cys	Ile	Ser	His	Asn	Thr	Glu	Gly	Ala	Glu	Leu	Glu	Asn	Ser	Ser	Asp
	130					135					140				
Asn	Met	Ala	Gln	Leu	Ala	Val	Gln	Gly	Pro	Lys	Ala	Ile	Gln	Ala	Leu
145				150					155						160
Gln	Lys	Leu	Thr	Asp	Ile	Asn	Leu	Ala	Asp	Ile	Pro	Tyr	Tyr	Thr	Phe
			165					170						175	
Lys	Val	Gly	Glu	Phe	Ala	Gly	Glu	Lys	Asn	Val	Ile	Ile	Ser	Asn	Thr
		180					185						190		
Gly	Tyr	Thr	Gly	Ala	Gly	Gly	Phe	Glu	Leu	Tyr	Phe	Tyr	Pro	Asp	Ala
		195				200						205			
Ala	Met	Lys	Ile	Trp	Asp	Ala	Val	Phe	Glu	Ala	Gly	Ala	Glu	Phe	Gly
	210					215				220					
Ile	Lys	Pro	Ile	Gly	Leu	Gly	Ala	Arg	Asp	Thr	Leu	Arg	Leu	Glu	Met
225				230					235						240
Gly	Phe	Cys	Leu	Tyr	Gly	Asn	Asp	Leu	Asp	Asp	Thr	Thr	Ser	Pro	Ile
			245					250						255	
Glu	Ala	Gly	Leu	Gly	Trp	Ile	Thr	Lys	Phe	Val	Asp	Gly	Lys	Asn	Phe
		260					265						270		
Thr	Asn	Arg	Ser	Met	Leu	Glu	Lys	Gln	Lys	Ala	Glu	Gly	Thr	Val	Arg
	275					280						285			
Lys	Leu	Val	Gly	Phe	Glu	Met	Ile	Asp	Arg	Gly	Ile	Pro	Arg	His	Gly
	290					295				300					
Tyr	Glu	Leu	Thr	Thr	Ala	Glu	Gly	Asp	Lys	Ile	Gly	Val	Val	Thr	Ser
305				310					315						320
Gly	Thr	Met	Ser	Pro	Ile	Arg	Lys	Ile	Gly	Ile	Gly	Met	Gly	Tyr	Val
			325					330						335	
Lys	Pro	Glu	Tyr	Ser	Lys	Ile	Gly	Thr	Glu	Ile	Cys	Ile	Asp	Met	Arg
		340					345						350		
Gly	Arg	Lys	Leu	Lys	Ala	Val	Val	Val	Lys	Pro	Pro	Phe	Arg	Lys	

355

360

365

<210> 9274
 <211> 74
 <212> PRT
 <213> B.fragilis

<220>
 <221> UNSURE
 <222> (67), (68), (69), (70), (71)
 <223> Identity of amino acid sequences at the above locations are unknown.

<400> 9274
 Met Ser Gln Gln Gln Glu Tyr Trp Phe Ala Ala Arg Thr Arg Lys Asp
 1 5 10 15
 Gln Glu Leu Thr Thr Arg Asp Ala Leu Glu Lys Ile Gly Val Glu Tyr
 20 25 30
 Phe Leu Pro Thr Gln Phe Val Ile Arg Gln Leu Lys Tyr Arg Arg Arg
 35 40 45
 Arg Val Glu Val Pro Ala Ile Arg Leu His Gln Gly Cys Lys Gly Pro
 50 55 60
 Gln Gly Xaa Xaa Xaa Xaa Xaa Gly Val Leu
 65 70

<210> 9275
 <211> 634
 <212> PRT
 <213> B.fragilis

<400> 9275
 Arg Ser Leu Ser Tyr Arg Leu Leu Ile Ile Asn His Leu Lys Lys Arg
 1 5 10 15
 Met Asp Lys Asn Thr Ile Thr Gly Leu Val Leu Ile Gly Ile Leu Leu
 20 25 30
 Val Gly Phe Ser Phe Leu Ser Arg Pro Ser Glu Glu Gln Ile Ala Ala
 35 40 45
 Gln Lys Arg Tyr Tyr Asp Ser Ile Ala Val Val Gln Gln Glu Glu
 50 55 60
 Ala Leu Arg Ala Lys Thr Glu Ala Ala Leu Ala Asn Glu Lys Glu Glu
 65 70 75 80
 Thr Ala Ala Asp Ser Ala Ser Leu Phe Phe Ser Ala Thr Lys Gly Lys
 85 90 95
 Glu Ala Phe Thr Thr Ile Gln Asn Asn Leu Val Glu Ile Thr Leu Asp
 100 105 110
 Asn Lys Gly Gly Arg Val Tyr Ser Ala Leu Leu Lys Asn Tyr Met Gly
 115 120 125
 Gln Asp Lys Lys Pro Val Val Leu Phe Asn Gly Ser Asp Ala Ser Met
 130 135 140
 Asn Phe Asn Phe Tyr Asn Lys Lys Gly Ala Leu Gln Thr Lys Asp Phe
 145 150 155 160
 Tyr Phe Glu Ala Val Asn Lys Thr Asp Ser Ser Val Thr Met Arg Leu
 165 170 175
 Ala Ala Asp Ser Ala Ser Tyr Ile Asp Phe Ile Tyr Thr Leu Lys Pro
 180 185 190
 Asp Asn Tyr Leu Met Ser Phe Val Ile Lys Ala Thr Gly Met Asp Gly
 195 200 205
 Lys Leu Ala Ala Ser Thr Asn Tyr Val Asp Ile Ser Trp Ser Gln Arg
 210 215 220
 Ala Arg Gln Ile Glu Lys Gly Tyr Thr Tyr Glu Asn Arg Leu Ala Asp

225 230 235 240
 Leu Thr Tyr Lys Tyr Thr Gly Asp Asp Val Asp Asn Leu Ser Ala Ser
 245 250 255
 Lys Asp Asp Glu Lys Ser Val Ser Glu Arg Leu Asp Trp Ile Ala Phe
 260 265 270
 Lys Asn Gln Phe Phe Ser Ser Val Phe Ile Ala Glu Gln Asp Phe Glu
 275 280 285
 Lys Thr Thr Val Lys Ser Lys Met Glu Lys Gln Gly Ser Gly Tyr Ile
 290 295 300
 Lys Asp Tyr Ser Ala Glu Met Ser Thr Phe Phe Asp Pro Thr Gly Lys
 305 310 315 320
 Gln Pro Thr Asp Met Tyr Phe Tyr Phe Gly Pro Asn His Tyr Lys Thr
 325 330 335
 Leu Thr Ala Leu Asp Lys Gly Arg Glu Glu Lys Trp Glu Leu Asn Asn
 340 345 350
 Leu Val Tyr Leu Gly Trp Pro Leu Ile Arg Trp Ile Asn Lys Trp Ile
 355 360 365
 Thr Ile Asn Val Phe Asp Trp Leu Ser Gly Trp Gly Leu Ser Met Gly
 370 375 380
 Ile Val Leu Leu Leu Leu Thr Ile Met Val Lys Ile Val Val Phe Pro
 385 390 395 400
 Ala Thr Trp Lys Thr Tyr Met Ser Ser Ala Lys Met Arg Val Leu Lys
 405 410 415
 Pro Lys Ile Asp Glu Ile Asn Lys Lys Tyr Pro Lys Gln Glu Asp Ala
 420 425 430
 Met Lys Lys Gln Gln Glu Val Met Gly Leu Tyr Ser Gln Tyr Gly Val
 435 440 445
 Ser Pro Met Gly Gly Cys Leu Pro Met Leu Leu Gln Phe Pro Ile Leu
 450 455 460
 Met Ala Leu Phe Met Phe Val Pro Ser Ala Ile Glu Leu Arg Gln Gln
 465 470 475 480
 Ser Phe Leu Trp Ala Asp Asp Leu Ser Thr Tyr Asp Ala Phe Ile Thr
 485 490 495
 Phe Pro Phe His Ile Pro Phe Leu Gly Asn His Leu Ser Leu Phe Cys
 500 505 510
 Leu Leu Met Thr Val Thr Asn Ile Leu Asn Thr Lys Tyr Thr Met Gln
 515 520 525
 Gln Gln Asp Thr Gly Ala Gln Pro Gln Met Ala Ala Met Lys Trp Met
 530 535 540
 Met Tyr Leu Met Pro Ile Met Phe Leu Phe Val Leu Asn Asp Tyr Pro
 545 550 555 560
 Ser Gly Leu Asn Tyr Tyr Tyr Phe Ile Ser Thr Leu Ile Ser Val Val
 565 570 575
 Thr Met Ile Ile Leu Arg Arg Thr Thr Asp Glu Asn Lys Leu Leu Thr
 580 585 590
 Glu Leu Glu Ala Lys Lys Lys Asp Pro Lys Gln Met Lys Lys Thr Gly
 595 600 605
 Phe Ala Ala Arg Leu Glu Ala Met Gln Lys Gln Gln Glu Gln Leu Ala
 610 615 620
 Lys Glu Arg Ala Asn Lys Gln Asn Lys Lys
 625 630

<210> 9276

<211> 191

<212> PRT

<213> B.fragilis

<400> 9276

Arg Ile Lys Ser Leu Ser Pro Tyr Tyr Lys Cys Lys Leu Ser Leu Tyr

1	5	10	15
Leu Pro Tyr Lys	Leu Lys Asn Thr Thr	Asn Met Phe Thr	Ile Arg Lys
20	25	30	
Ala Thr Ser Asp	Asp Cys Lys Leu Ile	Asn Glu Leu Ala	Asn Gln Val
35	40	45	
Phe Pro Ala Thr	Tyr Lys Glu Ile Leu	Ser Thr Glu Gln	Leu Asp Tyr
50	55	60	
Met Met Glu Trp	Met Tyr Ala Pro Glu	Asn Ile Arg Lys	Gln Met Glu
65	70	75	80
Glu Glu Gly His	Val Tyr Phe Ile Ala	Tyr Gln Gly Asp	Glu Pro Cys
85	90	95	
Gly Tyr Val Ser	Val Gln Pro Gln Asp	Ala Asp Val Phe	His Leu Gln
100	105	110	
Lys Ile Tyr Val	Leu Pro Gly Phe Gln	Gly Ala His Leu	Gly Ser Lys
115	120	125	
Leu Phe Asp His	Ala Val Gln Tyr Ile	Lys Glu Ile His	Pro Ser Pro
130	135	140	
Cys Leu Met Glu	Leu Asn Val Asn Arg	Asn Asn Lys Ala	Leu His Phe
145	150	155	160
Tyr Glu His Lys	Gly Met Lys Lys Leu	Arg Glu Gly Asp	Phe Pro Ile
165	170	175	
Gly Asn Gly Tyr	Tyr Met Asn Asp Tyr	Ile Met Gly Leu	Glu Leu
180	185	190	

<210> 9277

<211> 143

<212> PRT

<213> B.fragilis

<400> 9277

Ile Met Met Pro	Val Arg Arg Ser	Gln Asn Trp Leu	Pro Ser Ile Phe
1	5	10	15
Asn Asp Phe Phe	Asp Asn Glu Leu	Met Ala Lys Ala	Asn Ala Thr Ala
20	25	30	
Pro Ala Ile Asn	Val Ile Glu Thr	Asp Lys Ala Tyr	Lys Leu Glu Leu
35	40	45	
Ala Ala Pro Gly	Met Thr Lys Glu	Asp Phe Ser Val	Arg Ile Asp Glu
50	55	60	
Glu Asn Asn Leu	Val Ile Ser Met	Glu Lys Lys Ala	Glu Asn Lys Glu
65	70	75	80
Glu Lys Lys Asp	Gly Arg Tyr Leu	Arg Arg Glu Phe	Ser Tyr Ser Lys
85	90	95	
Phe Gln Gln Thr	Met Ile Leu Pro	Glu Asn Val Asp	Lys Asp His Ile
100	105	110	
Ser Ala Gln Val	Glu Asn Gly Val	Leu Asn Ile Glu	Leu Pro Lys Leu
115	120	125	
Ser Glu Glu Glu	Val Lys Lys Pro	Asp Arg Thr Ile	Glu Val Lys
130	135	140	

<210> 9278

<211> 113

<212> PRT

<213> B.fragilis

<400> 9278

Phe Tyr Asn Thr	Met Lys Arg Tyr	Cys Gln Thr Leu	Glu Leu Tyr Asn
1	5	10	15
Asp Ser Glu Leu	Ile Arg Ala Tyr	Val Ala Glu His	Gln His Val Trp
20	25	30	

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<210> 9279
<211> 438
<212> PRT
<213> B.fragilis
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Glu 1	Asn	Thr	Thr	Lys 5	Asp	Met	Ile	Trp	Asn 10	Glu	Ser	Ile	Glu	Cys 15	Met
Glu	Arg	Asp	Asn 20	Leu	His	Lys	Ile	Gln 25	Ser	Ile	Arg	Leu	Lys 30	Lys	Ile
Val	Glu	Tyr	Val	Tyr	His	Asn	Thr 40	Pro	Phe	Tyr	Arg	Lys 45	Lys	Met	Gln
Glu	Leu	Gly	Ile	Thr	Pro	Asp 55	Asp	Ile	Asn	Gly	Ile	Glu	Asp 60	Ile	Ser
Lys 65	Leu	Pro	Phe	Thr	Thr 70	Lys	Leu	Asp	Leu	Arg 75	Asp	Asn	Tyr	Pro	Phe 80
Gly	Leu	Cys	Ala	Val	Pro 85	Met	Ser	Gln	Ile 90	Val	Arg	Ile	His	Ala	Ser
Ser	Gly	Thr	Thr	Gly	Lys	Pro	Thr	Val 105	Val	Gly	Tyr	Thr	Arg 110	Lys	Asp
Leu	Ser	Thr	Trp	Ala	Glu	Cys	Leu	Ser 120	Arg	Ala	Phe	Thr	Ala 125	Tyr	Gly
Ala	Gly	Arg	Ser	Asp	Ile	Phe	Gln	Val 135	Ser	Tyr	Gly	Tyr	Gly 140	Leu	Phe
Thr 145	Gly	Gly	Leu	Gly	Ala	His	Ala	Gly	Ala	Glu	Asn	Ile	Gly 155	Ala	Ser 160
Val	Ile	Pro	Met	Ser	Ser	Gly	Asn	Thr	Glu	Lys	Gln	Ile	Thr	Leu 175	Met
His	Asp	Phe	Gly	Ser	Thr	Val	Leu	Cys 185	Cys	Thr	Pro	Ser	Tyr 190	Ala	Leu
Tyr	Leu	Ala	Asp	Ala	Ile	Asn	Asp	Ser 200	Gly	Phe	Pro	Arg	Glu 205	Glu	Phe
Lys	Leu	Lys	Ala	Gly	Ala	Phe	Gly	Ala	Glu	Pro	Trp	Thr	Glu	Ser	Met
Arg 225	Lys	Asp	Ile	Glu	Thr	Lys	Leu	Gly	Ile	Lys	Ala	Tyr	Asp 235	Ile	Tyr 240
Gly	Leu	Ser	Glu	Ile	Ala	Gly	Pro	Gly	Val	Gly	Tyr	Glu	Cys	Glu	Cys
Gln	Asn	Gly	Thr	His	Leu	Asn	Glu	Asp 265	His	Phe	Phe	Pro	Glu	Ile	Ile
Asp	Pro	His	Thr	Leu	Gln	Pro	Val	Glu	Pro	Gly	Gln	Thr	Gly	Glu	Leu
Val	Phe	Thr	Pro	Leu	Thr	Lys	Glu	Gly	Met	Pro	Leu	Arg	Thr	Arg	
Gln 305	Lys	Val	Leu	Pro	Val	Leu	His	Tyr	Glu	Lys	Cys	Ser	Ala	Glu	Arg

Ile Trp Val Arg Met Gly Arg Ile Leu Asp Val Ser Ala Asp Met Leu
 325 330 335
 Ile Ile Arg Gly Val Asn Val Phe Pro Thr Gln Ile Glu Ser Val Ile
 340 345 350
 Leu Glu Met Ala Glu Phe Glu Pro His Tyr Leu Leu Thr Ile Asp Arg
 355 360 365
 Lys Asn Asn Thr Asp Thr Met Glu Leu Lys Val Glu Val Arg Pro Asp
 370 375 380
 Tyr Tyr Ser Asp Glu Ile Asn Lys Met Leu Ala Leu Lys Lys Lys Leu
 385 390 395 400
 Thr Gly Arg Leu Gln Ser Val Leu Gly Leu Gly Val Asp Val Lys Leu
 405 410 415
 Val Glu Pro Arg Ser Ile Glu Arg Ser Val Gly Lys Ala Lys Arg Val
 420 425 430
 Ile Asp Asn Arg Lys Leu
 435

<210> 9280
 <211> 1033
 <212> PRT
 <213> B.fragilis

<400> 9280
 Lys Glu Lys Thr Asp Ile Leu Ser Tyr Tyr Ile Met Asn Lys Gln Thr
 1 5 10 15
 Ser Thr Pro Ser Gln Ile His Arg Leu Gln Gln Thr Ile Tyr Glu Asn
 20 25 30
 Leu Pro Val Gly Met Glu Leu Tyr Asp Gly Asp Gly Tyr Leu Ile Glu
 35 40 45
 Ile Asn Ser Val Gly Leu Lys Met Met Gly Val Lys Asp Lys Gln Asp
 50 55 60
 Met Leu Gly Ile Asn Ile Phe Glu Asn Pro Asn Ile Pro Val Glu Met
 65 70 75 80
 Lys Arg Arg Leu Arg Ala Gly Glu Asn Ile Arg Phe Thr Val Lys Tyr
 85 90 95
 Asp Phe Asp Leu Ala Lys Ala His Tyr Pro Thr Val Leu Ser Gly Ile
 100 105 110
 Ser Tyr Phe Glu Ile Ala Val Ser Val Val Leu Asp Glu Asn Lys Glu
 115 120 125
 Ile Asp Lys Phe Leu Phe Ile Ala Gln Asp Val Thr Glu Ala Val His
 130 135 140
 Thr Gln Glu Ile Leu Arg Gln Ser Lys Gln Lys Thr Ala Leu Ala Met
 145 150 155 160
 Gln Ala Ala Glu Val Met Leu Trp Glu Phe Asp Val Cys Thr Arg Leu
 165 170 175
 Phe Tyr Ala Glu Asn Glu Pro Leu Asn Gly Tyr Asp Pro Thr Gln Ala
 180 185 190
 Leu Thr Ile Glu Asp Tyr Lys Lys Gln Ile His Pro Glu Asp Trp Lys
 195 200 205
 Lys Ala Glu Ile Ile Leu Leu Asp Met Leu Ser Gly Cys Asp Cys Leu
 210 215 220
 Tyr Glu Ile Asp Phe Arg Ile Arg Leu Ser Asp Thr Ser Glu Trp Gln
 225 230 235 240
 Tyr Cys Lys Leu Asn Cys Thr Pro Tyr Glu Arg Gly Thr Asp Gly Lys
 245 250 255
 Val Ile Lys Tyr Val Gly Phe Arg Lys Asn Asn Thr Glu Leu Gln Arg
 260 265 270
 Arg Lys Leu Leu Gln Glu Asn Ile Leu Asn Ser Ile Pro Leu Pro Ile
 275 280 285

His 290	Ile	Lys	Asp	Val	Glu	Asp	Phe	Arg	Tyr	Val	Phe	Cys	Asn	Glu
Glu 305	Ser	Met	Arg	Met	Phe	Gly	Thr	His	Glu	Gly	Glu	Thr	Val	Cys
Val	Leu	Asp	Ser	Glu	Gln	Ala	Glu	Arg	Met	Gln	Lys	Thr	Asp	Leu
Val	Phe	Thr	Thr	Gly	Lys	Pro	Tyr	Phe	Gly	Val	Glu	Arg	Ile	Ile
Lys	Asp	Gly	Arg	Ser	Tyr	Asp	Thr	Ile	Val	Arg	Lys	Asn	Ile	Ile
Asp	Gly	Thr	Lys	Arg	Leu	Leu	Leu	Asn	Ile	Arg	Trp	Asp	Gln	Lys
Gln	Asn	Asp	Leu	Lys	Arg	Arg	Ala	Lys	Val	Leu	Ser	Met	Ser	Met
Val	Met	Asn	Ala	Tyr	Thr	Trp	Phe	Tyr	Glu	Pro	Ser	Lys	Gln	Arg
Ser	Phe	Gly	Glu	Gly	Phe	Asp	Lys	Ile	Gly	Arg	Asn	Ala	Leu	Asp
Asn	Ser	Phe	Glu	Lys	Phe	Ala	Glu	Cys	Val	His	Pro	Asp	Asp	Arg
Arg	Phe	Val	Asp	Thr	Met	Asp	Ala	Val	Leu	Lys	Gln	Asp	Ser	Gly
Trp	Asp	Ile	Glu	Tyr	Arg	Ala	Asp	Leu	Arg	Gly	Asn	Gly	Asn	Tyr
Trp	Trp	Lys	Thr	Arg	Gly	Val	Leu	Glu	Thr	Ser	Ile	Leu	Asn	Asp
Pro	Tyr	Gln	Tyr	Val	Ser	Gly	Met	Ser	Ile	Ser	Ile	Glu	Ser	Tyr
Gln	Thr	Glu	Leu	Thr	Leu	Leu	Lys	Asn	Lys	Glu	Lys	Leu	Asn	Lys
Ile	Arg	Gln	Asn	Glu	Leu	Val	Leu	Asn	Asn	Thr	Asn	Ser	Gly	Leu
Tyr	Ile	Thr	Thr	Asp	Tyr	Val	Val	Gln	Trp	Glu	Asn	Val	Ser	Val
Ser	Ser	Ser	Leu	Ser	Phe	Glu	Ala	Tyr	Lys	Arg	Gly	Glu	Cys	Cys
Lys	Ser	Ala	His	Asn	Arg	Thr	Ser	Pro	Cys	Asp	Asn	Cys	Val	Leu
Lys	Val	Leu	Val	Ser	Arg	Gln	Met	Glu	Lys	Ile	Lys	Phe	His	Leu
Asn	Asn	Arg	Ile	Val	Glu	Val	Leu	Ala	Thr	Pro	Val	Phe	Asn	Glu
Glu	Glu	Ile	Asp	Gly	Ile	Val	Ile	Arg	Val	Asp	Asp	Ile	Thr	Asp
Glu	Arg	Met	Ile	Glu	Glu	Leu	Arg	Gln	Ala	Lys	Leu	Leu	Ala	Glu
Ser	Asp	Lys	Leu	Lys	Ser	Ala	Phe	Leu	Ala	Asn	Met	Ser	His	Glu
Arg	Thr	Pro	Leu	Asn	Ala	Ile	Val	Gly	Phe	Ser	Asp	Leu	Leu	Met
Ser	Glu	Glu	Gln	Gly	Asp	Lys	Glu	Glu	Tyr	Met	Gln	Ile	Ile	Asn
Asn	Asn	Glu	Leu	Leu	Leu	Lys	Leu	Ile	Asn	Asp	Ile	Leu	Asp	Leu
Lys	Leu	Glu	Ser	Gly	Ser	Val	Glu	Leu	Lys	Tyr	Glu	Glu	Phe	Asp
Ala	Glu	Tyr	Phe	Asp	Ser	Met	Ala	Ser	Ser	Met	Lys	Gln	Arg	Val
Asn	Pro	Lys	Val	Gln	Leu	Val	Ala	Val	Asn	Pro	Tyr	Ser	Val	Cys

755	760	765
Val Arg Leu Asp Lys Asn Arg	Val Ala Gln Val	Val Thr Asn Tyr Val
770	775	780
Thr Asn Ala Ile Lys Tyr Thr	Pro Gln Gly Thr	Ile Glu Met Gly Tyr
785	790	795
Glu Val Val Asp Ala Gly Ile	Arg Leu Tyr Val	Arg Asp Thr Gly Ile
805	810	815
Gly Ile Pro Glu Lys Lys Arg	Lys Val Phe His Arg	Phe Glu Lys
820	825	830
Leu Asp Glu Phe Ala Gln Gly	Thr Gly Leu Gly Leu	Ser Ile Cys Lys
835	840	845
Ala Ile Thr Glu Ser Met Gly	Gly Ser Val Gly Phe	Glu Ser Glu Tyr
850	855	860
Ser Arg Gly Ser Leu Phe Trp	Ala Val Leu Pro Cys	Asp Pro Glu Val
865	870	875
Gln Met Arg Arg Glu Ser Asn	Ile Ala Ile Gly Gln	Asn Thr Gly Lys
885	890	895
Asp Asp Leu Ile Arg Ser Gly	Asn Gln Tyr Ser Ala	Leu Asp Arg Lys
900	905	910
Thr Val Leu Val Val Glu Asp	Ile Ser Ser Asn Tyr	Leu Leu Ile Ser
915	920	925
Ala Met Leu Ser Lys His Tyr	Asn Leu Leu His Ala	Val Asn Gly Glu
930	935	940
Gln Ala Val Ala Met Val Lys	Glu Tyr Lys Ile Asp	Leu Leu Leu Met
945	950	955
Asp Met Lys Met Pro Val Met	Asp Gly Leu Thr Ala	Thr Ala Glu Ile
965	970	975
Arg Lys Phe Asp Thr Asn Ile	Pro Ile Val Ala Leu	Thr Ala His Ala
980	985	990
Phe Glu Ser Asp Lys Val Ala	Ala Leu Lys Ser Gly	Cys Asn Asp Tyr
995	1000	1005
Leu Val Lys Pro Val Asp Lys	Ala Arg Leu Met Ser	Val Leu Arg Lys
1010	1015	1020
Tyr Cys His Pro Ser Thr	Leu Val Leu	
1025	1030	

<210> 9281

<211> 737

<212> PRT

<213> B.fragilis

<400> 9281

Arg Lys Glu Thr Gly Arg Lys Ser Arg	Phe Asp Leu Ile Phe Ala Tyr
1	5 10 15
Leu Arg Ser Thr Ile Met Glu Glu Asn Thr Ser Lys Leu Leu Ile Ile	
20	25 30
Lys Ile Thr Met Arg Gln Val Asn Leu Phe Ile Met Ser Ala Ala Met	
35	40 45
Met Leu Ala Ser Cys Gly Gly Thr Lys Asp Ala Gly Lys Thr Asp Gln	
50	55 60
Ala Leu Ile Gly Lys Ser Asp Ile Lys Ile Glu Gly Lys Arg Met Thr	
65	70 75 80
Pro Glu Ala Leu Trp Ala Met Gly Arg Ile Gly Gly Leu Ala Val Ser	
85	90 95
Pro Asp Gly Lys Gln Ile Ala Tyr Thr Val Ala Tyr Tyr Ser Val Pro	
100	105 110
Glu Asn Lys Ser Asn Arg Glu Val Phe Val Met Asn Ala Asp Gly Thr	
115	120 125
Asp Asn Arg Gln Ile Thr His Thr Pro Tyr Gln Glu Asn Glu Val Thr	

130	Trp	Ala	Ala	Asp	Gly	Ser	Lys	Leu	Leu	Phe	Leu	Ser	Asn	Asp	Asn	Gly
145						150					155					160
Ser	Ser	Gln	Leu	Tyr	Glu	Met	Asn	Pro	Asp	Gly	Ser	Gly	Arg	Lys	Gln	
				165					170						175	
Ile	Ser	Lys	Tyr	Asp	Gly	Asp	Ile	Glu	Gly	Tyr	Ser	Ile	Ser	Pro	Asp	
			180					185					190			
Gly	Lys	Lys	Ile	Leu	Phe	Ile	Ala	Gln	Val	Lys	Thr	Val	Lys	Ser	Thr	
		195					200					205				
Ala	Asp	Lys	Tyr	Pro	Asp	Leu	Asp	Lys	Ala	Thr	Gly	Ile	Ile	Ile	Thr	
	210					215					220					
Asp	Leu	Met	Tyr	Lys	His	Trp	Asp	Glu	Trp	Val	Thr	Thr	Ala	Pro	His	
225					230				235						240	
Pro	Phe	Ile	Ala	Asp	Phe	Asp	Gly	Lys	Ser	Ile	Ser	Asn	Ile	Ile	Asp	
			245					250						255		
Val	Leu	Glu	Gly	Glu	Pro	Tyr	Glu	Ser	Pro	Met	Lys	Pro	Trp	Gly	Gly	
			260				265						270			
Ile	Glu	Gln	Leu	Ala	Trp	Asn	Thr	Thr	Ser	Asp	Lys	Val	Ala	Tyr	Thr	
		275					280					285				
Cys	Arg	Lys	Lys	Thr	Gly	Leu	Ala	Tyr	Ala	Ile	Ser	Thr	Asn	Ser	Asp	
290					295						300					
Ile	Tyr	Val	Tyr	Asp	Leu	Asn	Thr	Lys	Lys	Thr	Val	Asn	Ile	Thr	Glu	
305					310					315					320	
Gly	Met	Met	Gly	Tyr	Asp	Thr	Asn	Pro	Gln	Tyr	Ser	Pro	Asp	Gly	Lys	
			325					330						335		
Ser	Ile	Ala	Trp	Gln	Ser	Met	Glu	Arg	Asp	Gly	Tyr	Glu	Ala	Asp	Gln	
			340				345						350			
Asn	Arg	Leu	Phe	Val	Met	Asn	Leu	Glu	Thr	Gly	Glu	Lys	Arg	Phe	Val	
		355					360					365				
Ser	Lys	Ala	Phe	Asp	Ser	Asn	Val	Asp	Ala	Phe	Val	Trp	Ser	Arg	Asp	
	370					375						380				
Ala	Lys	Thr	Ile	Tyr	Phe	Thr	Gly	Val	Trp	His	Gly	Glu	Thr	Gln	Ile	
385					390					395					400	
Tyr	Ser	Leu	Asp	Leu	Ser	Asn	Asp	Ser	Val	Arg	Pro	Val	Thr	Ser	Gly	
			405					410						415		
Met	Tyr	Asp	Tyr	Glu	Gly	Val	Ala	Leu	Phe	Gly	Asp	Lys	Leu	Ile	Ala	
		420					425						430			
Lys	Arg	His	Ser	Met	Ser	Met	Gly	Asp	Glu	Ile	Tyr	Ala	Ile	Ala	Leu	
		435					440					445				
Asp	Gly	Gln	Thr	Thr	Gln	Leu	Thr	Gln	Glu	Asn	Lys	Gln	Ile	Tyr	Asp	
	450					455					460					
Gln	Ile	Glu	Met	Gly	Lys	Val	Glu	Gly	Arg	Trp	Met	Lys	Thr	Thr	Asp	
465					470					475					480	
Ser	Lys	Glu	Met	Leu	Thr	Trp	Val	Ile	Tyr	Pro	Pro	Gln	Phe	Asp	Pro	
			485					490						495		
Asn	Lys	Lys	Tyr	Pro	Thr	Leu	Leu	Phe	Cys	Glu	Gly	Gly	Pro	Gln	Ser	
			500					505					510			
Pro	Val	Ser	Gln	Phe	Trp	Ser	Tyr	Arg	Trp	Asn	Met	Gln	Ile	Met	Ala	
	515						520					525				
Ala	Asn	Gly	Tyr	Ile	Val	Val	Ala	Pro	Asn	Arg	Arg	Gly	Leu	Pro	Gly	
	530					535					540					
Phe	Gly	Leu	Glu	Trp	Asn	Glu	Ala	Ile	Ser	Gly	Asp	Tyr	Gly	Gly	Gln	
545					550					555					560	
Cys	Met	Lys	Asp	Tyr	Phe	Thr	Ala	Ile	Asp	Glu	Met	Ala	Lys	Glu	Pro	
			565						570					575		
Phe	Val	Asp	Ser	Asp	Arg	Leu	Gly	Cys	Val	Gly	Ala	Ser	Phe	Gly	Gly	
		580					585						590			
Phe	Ser	Val	Tyr	Trp	Leu	Ala	Gly	His	His	Asp	Lys	Arg	Phe	Lys	Ala	
		595				600						605				

Phe Ile Ala His Asp Gly Ile Phe Asn Met Glu Met Gln Tyr Leu Glu
 610 615 620
 Thr Glu Glu Lys Trp Phe Ala Asn Trp Asp Met Gly Gly Ala Tyr Trp
 625 630 635 640
 Glu Lys Gln Asn Pro Thr Ala Gln Arg Thr Phe Ala Asn Ser Pro His
 645 650 655
 Leu Phe Val Glu Lys Trp Asp Thr Pro Ile Leu Cys Ile His Gly Glu
 660 665 670
 Lys Asp Tyr Arg Ile Leu Ala Asn Gln Ala Met Ala Ala Phe Asp Ala
 675 680 685
 Ala Val Met Arg Gly Val Pro Ala Glu Leu Leu Ile Tyr Pro Asp Glu
 690 695 700
 Asn His Trp Val Leu Lys Pro Gln Asn Gly Val Leu Trp Gln Arg Thr
 705 710 715 720
 Phe Phe Glu Trp Leu Asp Gln Trp Leu Lys Pro Asn Glu Thr Ala Gln
 725 730 735
 Lys

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 <212> PRT
 <213> B.fragilis

<400> 9282
 Tyr Ser Asn Phe Met Phe Glu Gly Gln Pro Lys Gly Leu Tyr Ala Leu
 1 5 10 15
 Ala Leu Ala Asn Thr Gly Glu Arg Phe Gly Tyr Tyr Thr Met Leu Ala
 20 25 30
 Ile Phe Thr Leu Phe Leu Gln Ala Lys Phe Gly Tyr Thr Ala Ala Glu
 35 40 45
 Thr Ser Thr Ile Phe Gly Cys Phe Leu Ala Ala Val Tyr Phe Ile Pro
 50 55 60
 Phe Phe Gly Gly Ile Leu Ala Asp Lys Phe Gly Tyr Gly Lys Met Val
 65 70 75 80
 Thr Met Gly Ile Val Val Met Phe Ile Gly Tyr Ala Leu Leu Ala Ile
 85 90 95
 Pro Thr Ser Asp Asn Ser Gly Lys Ile Met Met Phe Gly Ala Leu Ala
 100 105 110
 Leu Ile Ala Cys Gly Thr Gly Leu Phe Lys Gly Asn Leu Gln Val Met
 115 120 125
 Val Gly Asn Leu Tyr Asp Ala Pro Glu Tyr Ser Ser Lys Arg Asp Thr
 130 135 140
 Ala Phe Ser Ile Phe Tyr Met Ala Ile Asn Ile Gly Ala Met Tyr Ala
 145 150 155 160
 Pro Thr Ala Ala Thr Lys Val Thr Asn Tyr Met Leu Gly Lys Ala Gly
 165 170 175
 Leu Ser Tyr Val Pro Gln Ile Pro Ser Leu Ala His Gln Tyr Leu Asp
 180 185 190
 Gly Thr Ile Thr Pro Ala Asn Gln Ala Thr Leu Glu Ser Leu Gln Ala
 195 200 205
 Ala Gln Asn Phe Thr Gly Asp Ile Ala Thr Phe Cys Thr Thr Tyr Ile
 210 215 220
 Asp Lys Leu Ser Glu Ala Tyr Asn Tyr Gly Phe Gly Val Ala Cys Val
 225 230 235 240
 Ser Leu Ile Ile Ser Met Leu Ile Tyr Val Ala Phe Arg Ser Thr Phe
 245 250 255
 Lys His Ala Asp Tyr Asn Ser Lys Gln Ala Lys Pro Ala Asn Val Val
 260 265 270

Glu Glu Lys Leu Thr Pro Glu Gln Thr Lys Gln Arg Ile Val Ala Leu
 275 280 285
 Leu Leu Val Phe Ala Val Val Ile Phe Phe Trp Met Ala Phe His Gln
 290 295 300
 Asn Gly Leu Thr Leu Thr Phe Phe Ala Arg Asp Tyr Thr Ala Gln Glu
 305 310 315 320
 Val Thr Gly Leu Asp Arg Leu Gly Phe Asn Ile Val Asn Leu Thr Phe
 325 330 335
 Leu Leu Ile Val Ile Tyr Gly Leu Phe Ser Leu Phe Gln Gly Lys Thr
 340 345 350
 Gly Lys Ser Lys Thr Ile Ala Gly Val Val Val Met Val Ala Leu Leu
 355 360 365
 Cys Leu Gly Trp Ser Tyr Thr Ser Met Asp Pro Thr Ile Asn Ile Leu
 370 375 380
 Pro Gln Ile Phe Gln Gln Phe Asn Pro Phe Phe Val Ile Ala Leu Thr
 385 390 395 400
 Pro Val Ser Leu Ala Val Phe Gly Tyr Leu Ala Arg Lys Gly Lys Glu
 405 410 415
 Pro Ser Ala Pro Arg Lys Ile Gly Ile Gly Met Met Ile Ala Val Cys
 420 425 430
 Gly Phe Leu Ile Met Ala Ile Gly Ser Ile Gly Leu Pro Thr Pro Asp
 435 440 445
 Ala Leu Ala Ala Ser Gly Ile Glu Lys Asp Ala Leu Val Ser Pro Asn
 450 455 460
 Trp Leu Ile Ser Thr Tyr Leu Val Leu Thr Phe Ala Glu Leu Phe Leu
 465 470 475 480
 Ser Pro Met Gly Ile Ser Phe Val Ser Lys Val Ala Pro Pro Lys Tyr
 485 490 495
 Lys Gly Met Met Met Gly Gly Trp Phe Ala Ala Thr Ala Ile Gly Asn
 500 505 510
 Tyr Leu Val Ala Ile Ile Gly Tyr Leu Trp Gly Gly Met Gln Leu Trp
 515 520 525
 Met Val Trp Ser Val Leu Ile Val Cys Cys Leu Leu Ala Ala Leu Phe
 530 535 540
 Ile Phe Ser Ile Met Lys Lys Leu Glu Lys Val Ala
 545 550 555

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<211> 207

<212> PRT

<213> B.fragilis

<400> 9283

Thr Ile His Tyr Met Ser Lys Lys Glu Thr Leu Lys Gln Gln Ile Leu
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 Asp Leu Thr Arg Glu Tyr Tyr Lys Glu Val His Gly Ser Ser Arg Ser
 20 25 30
 Phe Glu Pro Gly Lys Ser Phe Val Asn Tyr Gly Gly Arg Tyr Phe Asp
 35 40 45
 Asp Arg Glu Leu Val Asn Leu Val Asp Ser Ser Leu Asp Phe Trp Leu
 50 55 60
 Thr Ala Gly Pro Trp Ala Arg Lys Phe Glu Ile Arg Phe Ala Glu Trp
 65 70 75 80
 Leu Gly Val Lys Tyr Cys Ser Leu Thr Asn Ser Gly Ser Ser Ala Asn
 85 90 95
 Leu Leu Ala Phe Met Ala Leu Thr Ser Pro Gln Leu Gly Glu Arg Arg
 100 105 110
 Ile Arg Arg Gly Asp Glu Val Ile Thr Val Ala Cys Gly Phe Pro Thr
 115 120 125

116 117 118 119 120 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140 141 142 143 144 145 146 147 148 149 150 151 152 153 154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184 185 186 187 188 189 190 191 192 193 194 195 196 197 198 199 200 201 202 203 204 205 206 207 208 209 210 211 212 213 214 215 216 217 218 219 220 221 222 223 224 225 226 227 228 229 230 231 232 233 234 235 236 237 238 239 240 241 242 243 244 245 246 247 248 249 250 251 252 253 254 255 256 257 258 259 260 261 262 263 264 265 266 267 268 269 270 271 272 273 274 275 276 277 278 279 280 281 282 283 284 285 286 287 288 289 290 291 292 293 294 295 296 297 298 299 300 301 302 303 304 305 306 307 308 309 310 311 312 313 314 315 316 317 318 319 320 321 322 323 324 325 326 327 328 329 330 331 332 333 334 335 336 337 338 339 340 341 342 343 344 345 346 347 348 349 350 351 352 353 354 355 356 357 358 359 360 361 362 363 364 365 366 367 368 369 370 371 372 373 374 375 376 377 378 379 380 381 382 383 384 385 386 387 388 389 390 391 392 393 394 395 396 397 398 399 400 401 402 403 404 405 406 407 408 409 410 411 412 413 414 415 416 417 418 419 420 421 422 423 424 425 426 427 428 429 430 431 432 433 434 435 436 437 438 439 440 441 442 443 444 445 446 447 448 449 450 451 452 453 454 455 456 457 458 459 460 461 462 463 464 465 466 467 468 469 470 471 472 473 474 475 476 477 478 479 480 481 482 483 484 485 486 487 488 489 490 491 492 493 494 495 496 497 498 499 500 501 502 503 504 505 506 507 508 509 510 511 512 513 514 515 516 517 518 519 520 521 522 523 524 525 526 527 528 529 530 531 532 533 534 535 536 537 538 539 540 541 542 543 544 545 546 547 548 549 550 551 552 553 554 555 556 557 558 559 560 561 562 563 564 565 566 567 568 569 570 571 572 573 574 575 576 577 578 579 580 581 582 583 584 585 586 587 588 589 590 591 592 593 594 595 596 597 598 599 600 601 602 603 604 605 606 607 608 609 610 611 612 613 614 615 616 617 618 619 620 621 622 623 624 625 626 627 628 629 630 631 632 633 634 635 636 637 638 639 640 641 642 643 644 645 646 647 648 649 650 651 652 653 654 655 656 657 658 659 660 661 662 663 664 665 666 667 668 669 670 671 672 673 674 675 676 677 678 679 680 681 682 683 684 685 686 687 688 689 690 691 692 693 694 695 696 697 698 699 700 701 702 703 704 705 706 707 708 709 710 711 712 713 714 715 716 717 718 719 720 721 722 723 724 725 726 727 728 729 730 731 732 733 734 735 736 737 738 739 740 741 742 743 744 745 746 747 748 749 750 751 752 753 754 755 756 757 758 759 760 761 762 763 764 765 766 767 768 769 770 771 772 773 774 775 776 777 778 779 780 781 782 783 784 785 786 787 788 789 790 791 792 793 794 795 796 797 798 799 800 801 802 803 804 805 806 807 808 809 810 811 812 813 814 815 816 817 818 819 820 821 822 823 824 825 826 827 828 829 830 831 832 833 834 835 836 837 838 839 840 841 842 843 844 845 846 847 848 849 850 851 852 853 854 855 856 857 858 859 860 861 862 863 864 865 866 867 868 869 870 871 872 873 874 875 876 877 878 879 880 881 882 883 884 885 886 887 888 889 890 891 892 893 894 895 896 897 898 899 900 901 902 903 904 905 906 907 908 909 910 911 912 913 914 915 916 917 918 919 920 921 922 923 924 925 926 927 928 929 930 931 932 933 934 935 936 937 938 939 940 941 942 943 944 945 946 947 948 949 950 951 952 953 954 955 956 957 958 959 960 961 962 963 964 965 966 967 968 969 970 971 972 973 974 975 976 977 978 979 980 981 982 983 984 985 986 987 988 989 990 991 992 993 994 995 996 997 998 999 1000

Thr	Val	Thr	Pro	Cys	Ile	Gln	Tyr	Gly	Ala	Val	Pro	Val	Phe	Val	Asp
130						135					140				
Val	Thr	Ile	Pro	Glu	Tyr	Asn	Ile	Asp	Val	Thr	Gln	Leu	Glu	Ala	Ala
145					150					155					160
Leu	Ser	Pro	Lys	Thr	Lys	Ala	Val	Met	Ile	Ala	His	Ser	Leu	Gly	Asn
				165					170					175	
Pro	Phe	Asp	Leu	Gln	Ala	Val	Lys	Asp	Phe	Cys	Asp	Lys	His	Asn	Leu
		180						185					190		
Trp	Leu	Val	Glu	Asp	Asn	Cys	Asp	Ala	Leu	Gly	Ser	Thr	Val	Phe	
	195						200					205			

<210> 9284
 <211> 189
 <212> PRT
 <213> B.fragilis

Arg	Lys	Asp	Tyr	Cys	Arg	Asn	Ile	Leu	Ser	Val	His	Val	Arg	Val	Leu
1				5					10					15	
Ser	Leu	His	His	Gln	Leu	Ser	Lys	Lys	Tyr	Leu	Thr	Lys	Lys	Arg	Lys
			20					25					30		
Met	Lys	Lys	Lys	Ala	Ile	Phe	Leu	Leu	Thr	Ile	Leu	Leu	Met	Ala	Ser
		35					40					45			
Phe	Val	Thr	Ser	Cys	Ser	Ser	Asp	Asp	Asp	Asn	Glu	Lys	Thr	Glu	Phe
	50					55					60				
Thr	Ser	Thr	Leu	Thr	Ala	Asn	Gly	Ser	Ala	Val	Lys	Ile	Thr	Asn	Leu
65					70					75					80
Glu	Gly	Lys	Ala	Ile	Ala	Gly	Ser	Ile	Tyr	Glu	Phe	Trp	Ile	Asn	Asp
				85					90					95	
Ala	Thr	Ser	Asp	Phe	Tyr	Ile	Gln	Gly	Asn	Ile	Thr	Ser	His	Glu	Val
			100					105					110		
His	Thr	Ser	Gly	Lys	Asp	Val	Thr	Lys	Asp	Cys	Lys	Met	Met	Ile	Ala
		115					120					125			
Leu	Val	Asn	Asn	Glu	Glu	Trp	Tyr	Thr	Ser	Glu	Lys	Glu	Tyr	Val	Ser
	130					135					140				
Gly	Thr	Val	Thr	Ile	Glu	Lys	Trp	Asp	Leu	Glu	Asn	Phe	Lys	Val	Thr
145					150					155					160
Leu	Val	Phe	Lys	Asp	Tyr	Lys	Cys	Lys	Ser	Gly	Ser	Lys	Ser	Ile	Val
			165						170					175	
Leu	Asn	Gly	Ser	Val	Thr	Phe	Pro	Thr	Ser	Ile	Asn	Ile			
		180						185							

<210> 9285
 <211> 476
 <212> PRT
 <213> B.fragilis

Arg	Asn	Arg	Tyr	Gly	Glu	Val	Glu	Ala	Leu	Lys	Ser	Ala	Thr	Phe	Ser
1				5					10					15	
Val	Asn	Pro	Gly	Glu	Leu	Phe	Gly	Ile	Ile	Gly	Pro	Asp	Gly	Ala	Gly
		20						25					30		
Lys	Ser	Thr	Leu	Phe	Arg	Ile	Leu	Thr	Thr	Leu	Leu	Leu	Ala	Asp	Ser
		35					40					45			
Gly	Thr	Ala	Thr	Val	Asn	Gly	Leu	Asp	Val	Val	Lys	Asp	Tyr	Lys	Gln
	50					55					60				
Ile	Arg	Gln	Gln	Val	Gly	Tyr	Met	Pro	Gly	Arg	Phe	Ser	Leu	Tyr	Gln
65					70					75					80
Asp	Leu	Thr	Val	Glu	Glu	Asn	Leu	Asp	Phe	Phe	Ala	Thr	Val	Phe	His

				85					90					95	
Thr	Thr	Ile	Arg	Glu	Asn	Tyr	Asp	Leu	Val	Lys	Asp	Ile	Tyr	Gln	Gln
			100					105					110		
Ile	Glu	Pro	Phe	Arg	Lys	Arg	Arg	Ala	Gly	Ala	Leu	Ser	Gly	Gly	Met
		115					120					125			
Lys	Gln	Lys	Leu	Ala	Leu	Ser	Cys	Ala	Leu	Ile	His	Lys	Pro	Glu	Ile
	130					135					140				
Leu	Phe	Leu	Asp	Glu	Pro	Thr	Thr	Gly	Val	Asp	Pro	Val	Ser	Arg	Lys
145					150					155					160
Glu	Phe	Trp	Glu	Met	Leu	Arg	His	Leu	Lys	Asp	Gln	Gly	Ile	Thr	Ile
			165						170					175	
Leu	Val	Ser	Thr	Pro	Ile	Met	Asp	Glu	Ala	Arg	Gln	Cys	Asp	Arg	Ile
		180						185					190		
Ala	Phe	Ile	Asn	Glu	Gly	Glu	Ile	Gln	Gly	Ile	Asp	Val	Pro	Glu	Arg
	195						200				205				
Ile	Leu	Gln	Arg	Phe	Ser	His	Ile	Leu	Cys	Pro	Pro	Gly	Leu	Glu	Arg
	210					215					220				
Thr	Glu	Val	His	Ala	Gly	Asn	Asp	Phe	Ala	Ile	Glu	Val	Asp	Gln	Leu
225					230					235					240
Thr	Lys	Cys	Phe	Gly	His	Phe	Thr	Ala	Val	Asp	His	Ile	Ser	Phe	Arg
			245						250					255	
Val	Asn	Arg	Gly	Glu	Ile	Phe	Gly	Phe	Leu	Gly	Ala	Asn	Gly	Ala	Gly
			260					265					270		
Lys	Thr	Thr	Ala	Met	Arg	Met	Leu	Cys	Gly	Leu	Ser	Lys	Pro	Thr	Ser
		275					280					285			
Gly	Met	Ala	Arg	Val	Ala	Gly	Phe	Asp	Val	Ala	Ala	His	Pro	Glu	Glu
	290					295				300					
Val	Lys	Lys	Asn	Ile	Gly	Tyr	Met	Ser	Gln	Lys	Phe	Ser	Leu	Tyr	Glu
305					310					315					320
Asp	Leu	Lys	Val	Trp	Glu	Asn	Ile	Arg	Leu	Phe	Ala	Gly	Ile	Tyr	Gly
			325					330						335	
Met	Gln	Asp	Arg	Glu	Ile	Ala	Glu	Lys	Thr	Asp	Ala	Leu	Leu	Asp	Arg
			340					345					350		
Leu	Gly	Phe	Ser	Gly	Glu	Arg	Asp	Thr	Leu	Val	Lys	Ser	Leu	Pro	Leu
		355					360					365			
Gly	Trp	Lys	Gln	Lys	Leu	Ala	Phe	Ser	Val	Ser	Ile	Phe	His	Asn	Pro
	370					375					380				
Arg	Ile	Val	Phe	Leu	Asp	Glu	Pro	Thr	Gly	Gly	Val	Asp	Pro	Ala	Thr
385					390					395					400
Arg	Arg	Gln	Phe	Trp	Glu	Leu	Ile	Tyr	Gln	Ala	Ala	Asp	Arg	Gly	Ile
			405						410					415	
Thr	Val	Phe	Val	Thr	Thr	His	Tyr	Met	Asp	Glu	Ala	Glu	Tyr	Cys	Asn
			420					425					430		
Arg	Val	Ser	Ile	Met	Val	Asp	Gly	Arg	Ile	Glu	Ala	Leu	Asp	Thr	Pro
		435					440					445			
Arg	Gly	Leu	Lys	Ala	His	Phe	His	Ala	Asp	Thr	Met	Asp	Asp	Val	Phe
	450					455					460				
Gln	Gln	Leu	Ala	Arg	Lys	Ala	Val	Arg	Lys	Ala	Asp				
465					470					475					

<210> 9286

<211> 112

<212> PRT

<213> B.fragilis

<400> 9286

Thr	Lys	Ile	Leu	Trp	Met	Ser	Cys	Leu	Gly	Arg	Met	Leu	Pro	Gln	Thr
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Ile	Arg	Met	Asp	Gly	Ser	Arg	Pro	Pro	Ile	Arg	Lys	Lys	Leu	Val	Thr

	20		25		30
Asn Asn Tyr	Asn Pro Thr Phe	Cys Arg Asn Arg Leu Tyr	Arg Leu Trp		
35		40	45		
Ile Lys Leu	Phe Tyr Gly Pro Ser Thr	Gln Val Tyr Arg Asn Ser Lys			
50		55	60		
Arg Ile Asn	Val His Gln Lys Tyr Lys Lys Glu	Asn Asn Ala Gln Ile			
65		70	75		80
Ile Met Glu	Gln Gln Pro Gln Leu Asn Asp His	Asn Lys Gln Glu Tyr			
	85	90	95		
Pro Pro Met	His Thr Ala Glu Ile Asn Thr	Pro Leu Ile Asn Gln Leu			
	100	105	110		

<210> 9287
 <211> 452
 <212> PRT
 <213> B.fragilis

<400> 9287

Ile Lys Ser	Tyr Tyr Ala His Asn Lys Met Phe Lys Asn Ser Lys Lys				
1	5	10	15		
Lys Ile Thr	Leu Gly Val Ser Val Gln Lys Phe Glu Asn Lys Pro Asn				
	20	25	30		
Asn Trp Lys	Ile Leu Thr Tyr Lys Arg His Thr Ile Thr Ile Glu Glu				
	35	40	45		
Leu Val Asn	Leu Ile Cys Lys Gly His Cys Ile Cys Gln Asn Phe Lys				
	50	55	60		
Thr Thr Ser	Glu Ile Phe Gly Leu Arg Glu Lys Thr Ile Ala Asn Phe				
65	70	75	80		
Asp Phe Ala	Asp Cys Val Ile Leu Asp Ile Asp Asp Thr Phe Leu Ser				
	85	90	95		
Met Asn Asp	Phe Tyr Leu Ser Leu Lys Asp Glu His Lys Pro Thr Ile				
	100	105	110		
Ile Tyr Thr	Thr Tyr Ser Asn Ile Asp Asn Ile Asn Asn Arg Phe Arg				
	115	120	125		
Pro Ile Tyr	Val Phe Asn Glu Pro Ile Arg Ser Asn Glu Tyr Tyr Arg				
	130	135	140		
Gly Ile Ala	Asn Thr Ile Val Tyr Asn Ile Gln Lys Glu Ile Glu Gly				
145	150	155	160		
Phe Asp Leu	Lys Asp Lys Thr Cys Leu Asn Ala Ser Gln Gln Phe Ala				
	165	170	175		
Gly Asn Gly	Asn Asp Asn Ile Val Tyr Tyr Tyr Asn Asp Asn Ile Phe				
	180	185	190		
Cys Pro Thr	Asp Phe Gly Phe Asp Glu Asn Ser Phe Ser Asn Ser Asp				
	195	200	205		
Ser Ile Leu	Lys Arg Glu Arg Lys Asn Asn Ile Gln Ile Asp Leu Glu				
	210	215	220		
Ser Leu Ile	Gly Asn Ser Glu Phe Met Lys Asp Phe Trp Ser Met Gly				
225	230	235	240		
Tyr Lys Lys	Asn Glu Glu Ile Phe Ile Arg Lys Tyr Ala Gln Ile Tyr				
	245	250	255		
Pro Phe Ile	Glu Ala Thr Pro Leu Pro Glu Thr Asp Ser Asp Thr Pro				
	260	265	270		
Tyr Ile Leu	Pro Asp Asn Tyr Val Lys Ile Ala Arg Tyr Trp Tyr				
	275	280	285		
Lys Glu Pro	Leu Thr Lys Gly Asp Gly Thr Ile Val Tyr Lys Ser His				
	290	295	300		
Ala Val Lys	Leu Lys Ser Gly His Arg Arg Lys Leu Leu Tyr Asp Gly				
305	310	315	320		
Cys Leu Leu	Arg Lys Ile Met Leu Pro Lys Ile Thr Met Glu His Leu				

325 330 335
 Leu Tyr Cys Leu Val Cys Glu Arg Arg Tyr Tyr Val Asp Asn Gln Asp
 340 345 350
 Lys Val Ile Thr Asn Lys Ile Leu Tyr Gln Ile Ala Lys Asp Ala Trp
 355 360 365
 Asn Asp Thr Lys Arg Ser Ile Asn Pro Lys Lys Glu Glu Arg Gln Phe
 370 375 380
 Val Val Asn Pro Lys Tyr Cys Glu Lys Tyr Gly Ile Ser Lys Gln Ala
 385 390 395 400
 Ala Arg Asn Ile Ala Ala Lys Ile Leu Leu Asp Leu Gln Leu Lys Gln
 405 410 415
 Leu Tyr Asp Thr Asn Leu Ser Val Lys Glu Asn Leu Glu Ser Leu Lys
 420 425 430
 Asn Gln Gly Ile Lys Ile Gly Lys Ser Ser Leu Tyr Asn Trp Val Lys
 435 440 445
 Ser Gln Lys Ile
 450

<210> 9288
 <211> 61
 <212> PRT
 <213> B.fragilis

<400> 9288
 Cys Gly Leu Tyr Pro Ser Pro Pro Met Thr Leu Leu Tyr Ile Asn Gly
 1 5 10 15
 Ile Pro Ser Leu Lys Ile Asn Leu Pro Tyr Ile Val Gly Ile Ile Asn
 20 25 30
 Val Phe Ser Ala Ile Gly Asn Ile Leu Val Ile Trp Val Ala Ser Asp
 35 40 45
 Glu Tyr Ala Val Leu Val Cys Lys Ser Val Cys Ile Val
 50 55 60

<210> 9289
 <211> 958
 <212> PRT
 <213> B.fragilis

<400> 9289
 Trp Asn Val Tyr Leu Asn Ser Asp Asn Met Gln Lys Leu Leu Ser Leu
 1 5 10 15
 Pro Pro Asn Leu Val Gln Ser Phe His Glu Leu Glu Arg Val Asn Arg
 20 25 30
 Thr Asp Trp Phe Cys Thr Ser Asp Pro Val Gly Lys Lys Leu Gly Ser
 35 40 45
 Gly Gly Gly Thr Ser Trp Leu Leu Glu Glu Cys Tyr Asn Glu Tyr Ser
 50 55 60
 Asp Gly Ala Thr Phe Gly Glu Trp Leu Glu Lys Glu Lys Arg Ile Leu
 65 70 75 80
 Leu His Ala Gly Gly Gln Ser Arg Arg Leu Pro Gly Tyr Ala Pro Ser
 85 90 95
 Gly Lys Ile Leu Thr Pro Val Pro Val Phe Arg Trp Glu Arg Gly Gln
 100 105 110
 His Leu Gly Gln Asn Leu Leu Ser Leu Gln Leu Pro Leu Tyr Glu Lys
 115 120 125
 Ile Met Ser Leu Ala Pro Asp Lys Leu His Thr Leu Ile Ala Ser Gly
 130 135 140
 Asp Val Tyr Ile Arg Ser Glu Lys Pro Leu Gln Ser Ile Pro Glu Ala
 145 150 155 160

Asp	Val	Val	Cys	Tyr	Gly	Leu	Trp	Val	Asp	Pro	Ser	Leu	Ala	Thr	His	
				165					170					175		
His	Gly	Val	Phe	Ala	Ser	Asp	Arg	Lys	His	Pro	Glu	Gln	Leu	Asp	Phe	
			180					185					190			
Met	Leu	Gln	Lys	Pro	Ser	Leu	Ala	Glu	Leu	Glu	Ser	Leu	Ser	Lys	Thr	
		195					200					205				
His	Leu	Phe	Leu	Met	Asp	Ile	Gly	Ile	Trp	Leu	Leu	Ser	Asp	Arg	Ala	
	210				215						220					
Val	Glu	Ile	Leu	Met	Lys	Arg	Ser	His	Lys	Glu	Ser	Ser	Glu	Glu	Leu	
225					230					235					240	
Lys	Tyr	Tyr	Asp	Leu	Tyr	Ser	Asp	Phe	Gly	Leu	Ala	Leu	Gly	Thr	His	
			245						250					255		
Pro	Arg	Ile	Glu	Asp	Glu	Glu	Val	Asn	Thr	Leu	Ser	Val	Ala	Ile	Leu	
			260					265					270			
Pro	Leu	Pro	Gly	Gly	Glu	Phe	Tyr	His	Tyr	Gly	Thr	Ser	Lys	Glu	Leu	
		275					280					285				
Ile	Ser	Ser	Thr	Leu	Ser	Val	Gln	Asn	Lys	Val	Tyr	Asp	Gln	Arg	Arg	
	290					295					300					
Ile	Met	His	Arg	Lys	Val	Lys	Pro	Asn	Pro	Ala	Met	Phe	Val	Gln	Asn	
305					310					315					320	
Ala	Val	Val	Arg	Ile	Pro	Leu	Cys	Ala	Glu	Asn	Ala	Asp	Leu	Trp	Ile	
			325						330					335		
Glu	Asn	Ser	His	Ile	Gly	Pro	Lys	Trp	Lys	Ile	Ala	Ser	Arg	His	Ile	
		340						345					350			
Ile	Thr	Gly	Val	Pro	Glu	Asn	Asp	Trp	Ser	Leu	Ala	Val	Pro	Ala	Gly	
	355						360					365				
Val	Cys	Val	Asp	Val	Val	Pro	Met	Gly	Asp	Lys	Gly	Phe	Val	Ala	Arg	
	370					375					380					
Pro	Tyr	Gly	Leu	Asp	Asp	Val	Phe	Lys	Gly	Asp	Leu	Arg	Asp	Ser	Lys	
385					390					395					400	
Thr	Thr	Leu	Thr	Gly	Ile	Pro	Phe	Gly	Glu	Trp	Met	Ser	Lys	Arg	Gly	
			405						410					415		
Leu	Ser	Tyr	Thr	Asp	Leu	Lys	Gly	Arg	Thr	Asp	Asp	Leu	Gln	Ala	Ala	
		420						425					430			
Ser	Val	Phe	Pro	Met	Val	Asn	Ser	Val	Glu	Glu	Leu	Gly	Leu	Val	Leu	
	435						440					445				
Arg	Trp	Met	Leu	Ser	Glu	Pro	Glu	Leu	Glu	Glu	Gly	Lys	Asn	Ile	Trp	
	450					455					460					
Leu	Arg	Ser	Glu	His	Phe	Ser	Ala	Asp	Glu	Ile	Ser	Ala	Gly	Ala	Asn	
465					470					475					480	
Leu	Lys	Arg	Leu	Tyr	Ala	Gln	Arg	Glu	Glu	Phe	Arg	Lys	Gly	Asn	Trp	
			485						490					495		
Lys	Ala	Leu	Ala	Val	Asn	His	Glu	Lys	Ser	Val	Phe	Tyr	Gln	Leu	Asp	
		500						505					510			
Leu	Ala	Asp	Ala	Ala	Glu	Asp	Phe	Val	Arg	Leu	Gly	Leu	Asp	Met	Pro	
	515						520					525				
Glu	Leu	Leu	Pro	Glu	Asp	Ala	Leu	Gln	Met	Ser	Arg	Ile	His	Asn	Arg	
	530					535					540					
Met	Leu	Arg	Ala	Arg	Ile	Leu	Lys	Leu	Asp	Gly	Lys	Asp	Tyr	Arg	Pro	
545					550					555					560	
Glu	Glu	Gln	Ala	Ala	Phe	Asp	Leu	Leu	Arg	Asp	Gly	Leu	Leu	Asp	Gly	
			565						570					575		
Ile	Ser	Asn	Arg	Lys	Ser	Thr	Pro	Lys	Leu	Asp	Val	Tyr	Ser	Asp	Gln	
		580						585					590			
Ile	Val	Trp	Gly	Arg	Ser	Pro	Val	Arg	Ile	Asp	Met	Ala	Gly	Gly	Trp	
	595						600					605				
Thr	Asp	Thr	Pro	Pro	Tyr	Ser	Leu	Tyr	Ser	Gly	Gly	Asn	Val	Val	Asn	
	610					615					620					
Leu	Ala	Ile	Glu	Leu	Asn	Gly	Gln	Pro	Pro	Leu	Gln	Val	Tyr	Val	Lys	

165 170 175 180 185 190 195 200 205 210 215 220 225 230 235 240 245 250 255 260 265 270 275 280 285 290 295 300 305 310 315 320 325 330 335 340 345 350 355 360 365 370 375 380 385 390 395 400 405 410 415 420 425 430 435 440 445 450 455 460 465 470 475 480 485 490 495 500 505 510 515 520 525 530 535 540 545 550 555 560 565 570 575 580 585 590 595 600 605 610 615 620

625	630	635	640
Pro Cys Lys Asp Phe His Ile Val Leu Arg Ser Ile Asp Met Gly Ala			
	645	650	655
Met Glu Ile Val Ser Thr Phe Asp Glu Leu Gln Asp Tyr Lys Lys Ile			
	660	665	670
Gly Ser Pro Phe Ser Ile Pro Lys Ala Ala Leu Ser Leu Ala Gly Phe			
	675	680	685
Ala Pro Ala Phe Ser Ala Val Ser Tyr Ala Ser Leu Glu Glu Gln Leu			
	690	695	700
Lys Asp Phe Gly Ala Gly Ile Glu Val Thr Leu Leu Ala Ala Ile Pro			
705	710	715	720
Ala Gly Ser Gly Leu Gly Thr Ser Ser Ile Leu Ala Ser Thr Val Leu			
	725	730	735
Gly Ala Ile Asn Asp Phe Cys Gly Leu Ala Trp Asp Lys Asn Glu Ile			
	740	745	750
Cys Gln Arg Thr Leu Val Leu Glu Gln Leu Leu Thr Thr Gly Gly Gly			
	755	760	765
Trp Gln Asp Gln Tyr Gly Gly Val Leu Gln Gly Val Lys Leu Leu Gln			
	770	775	780
Thr Glu Ala Gly Phe Ala Gln Ser Pro Leu Val Arg Trp Leu Pro Asp			
785	790	795	800
His Leu Phe Thr His Pro Glu Tyr Lys Asp Cys His Leu Leu Tyr Tyr			
	805	810	815
Thr Gly Ile Thr Arg Thr Ala Lys Gly Ile Leu Ala Glu Ile Val Ser			
	820	825	830
Ser Met Phe Leu Asn Ser Ser Leu His Leu Asn Leu Leu Ser Glu Met			
	835	840	845
Lys Ala His Ala Leu Asp Met Asn Glu Ala Ile Gln Arg Gly Ser Phe			
	850	855	860
Val Glu Phe Gly Arg Leu Val Gly Lys Thr Trp Glu Gln Asn Lys Ala			
865	870	875	880
Leu Asp Ser Gly Thr Asn Pro Pro Ala Val Glu Ala Ile Ile Asp Leu			
	885	890	895
Ile Lys Asp Tyr Thr Leu Gly Tyr Lys Leu Pro Gly Ala Gly Gly Gly			
	900	905	910
Gly Tyr Leu Tyr Met Val Ala Lys Asp Pro Gln Ala Ala Val Arg Ile			
	915	920	925
Arg Lys Ile Leu Thr Glu Asn Ala Pro Asn Pro Arg Ala Arg Phe Val			
	930	935	940
Glu Met Thr Leu Ser Asp Lys Gly Phe Gln Val Ser Arg Ser			
945	950	955	

<210> 9290

<211> 409

<212> PRT

<213> B.fragilis

<400> 9290

Leu Tyr Gly Tyr Trp Leu Ser Leu Phe Leu Ser Ser Thr Ser Leu Thr			
1	5	10	15
Trp Asp Gly Leu Ile Leu Ser Phe Gly Ser Asp Asp Val Lys Cys Gln			
	20	25	30
Leu Val Asp Asp His Arg Asn Ala Ser Arg Ser Val Ser Gly Arg His			
	35	40	45
Phe Phe Ser His Lys Asn Thr Val Leu Cys Asn Glu Pro Gln Ile Phe			
	50	55	60
Cys Tyr Phe Cys Leu Leu Leu Ile Glu Lys Asn Thr Tyr His Met Gly			
65	70	75	80
Glu His Ile Cys Phe Arg Arg Asn Glu Arg Leu Ala Thr Val Asn Pro			

				85					90					95			
His	Trp	Arg	Gly	Asn	Pro	Val	Val	Arg	Gly	Lys	Phe	Val	Asn	Arg	Gln		
			100						105					110			
His	Arg	Phe	Arg	Pro	Gly	Met	Gly	Ser	Val	Leu	Lys	Trp	Arg	Leu	Ser		
		115					120						125				
Pro	Asn	Pro	Gln	Arg	Lys	Glu	Lys	Lys	Ser	Val	Lys	Trp	Ser	Pro	Lys		
		130				135						140					
Leu	Asn	Tyr	Leu	Arg	Ser	Leu	Asp	Gly	Val	Val	Gly	Asn	Ser	Leu	Ile		
145					150						155				160		
Trp	Leu	Gly	His	Asn	Ser	Phe	Phe	Leu	Gln	Leu	Gly	Arg	Lys	Arg	Ile		
				165					170					175			
Met	Phe	Asp	Pro	Val	Phe	Gly	Asp	Ile	Pro	Phe	Val	Lys	Arg	Gln	Ser		
			180					185						190			
Asp	Phe	Pro	Ala	Asn	Pro	Asp	Ile	Phe	Thr	Asp	Ile	Asp	Tyr	Leu	Leu		
		195					200					205					
Ile	Ser	His	Asp	His	Phe	Asp	His	Leu	Asp	Lys	Gln	Ser	Val	Ala	Arg		
	210					215					220						
Leu	Val	Lys	Asn	Asn	Pro	Gly	Met	Lys	Leu	Phe	Cys	Gly	Leu	Gly	Thr		
225				230						235					240		
Gly	Glu	Leu	Ile	Lys	Gly	Trp	Phe	Pro	Glu	Phe	Glu	Val	Thr	Glu	Ala		
				245					250					255			
Gly	Trp	Tyr	Gln	Gln	Ile	Glu	Asp	Asp	Gly	Leu	Lys	Ile	Thr	Phe	Leu		
			260					265					270				
Pro	Ala	Gln	His	Trp	Ser	Lys	Arg	Ser	Val	Arg	Asp	Gly	Gly	Arg	Arg		
		275					280					285					
Leu	Trp	Gly	Ala	Phe	Met	Val	Gln	Ala	Asp	Gly	Ile	Ser	Leu	Tyr	Tyr		
	290					295					300						
Ser	Gly	Asp	Thr	Gly	Tyr	Ser	Arg	His	Phe	Arg	Glu	Ile	Pro	Asp	Leu		
305					310					315				320			
Phe	Gly	Ala	Pro	Asp	Tyr	Ala	Leu	Val	Gly	Ile	Gly	Ala	Tyr	Lys	Pro		
				325					330					335			
Arg	Trp	Phe	Met	Gln	Pro	Asn	His	Ile	Ser	Pro	Tyr	Asp	Ala	Leu	Thr		
			340					345					350				
Ala	Ser	Thr	Asp	Met	Lys	Ala	Ala	Leu	Thr	Ile	Pro	Met	His	Tyr	Gly		
		355				360					365						
Thr	Phe	Asp	Leu	Ser	Asp	Glu	Pro	Leu	His	Asp	Pro	Pro	Leu	Val	Phe		
	370				375					380							
Ala	Ala	Glu	Ala	Lys	Lys	Arg	Lys	Ile	Asp	Val	Tyr	Ile	Pro	Val	Leu		
385					390					395				400			
Gly	Glu	Val	Val	Lys	Leu	Lys	Arg	Met									
				405													

<210> 9291

<211> 142

<212> PRT

<213> B.fragilis

<400> 9291

Val	Leu	Ile	Gln	Lys	Glu	Asp	Ile	Met	Ile	Lys	Gln	Asp	Tyr	Leu	Ile
1				5				10					15		
Arg	Met	Ile	Gln	Glu	Ile	Ile	Ser	Leu	Ile	Val	Asn	Ala	Ile	Leu	Asn
			20				25					30			
Lys	Lys	Lys	Phe	Arg	Lys	Asp	Glu	Trp	Thr	Glu	Tyr	Asp	Cys	Leu	Thr
		35				40					45				
Arg	Gln	Ile	Leu	Gly	Val	Ser	Gln	Glu	Glu	Leu	Leu	Ser	Met	Ser	Leu
	50				55				60						
Asp	Glu	Met	Ile	Asp	Cys	Tyr	Glu	Gly	Asp	Pro	Asn	Arg	Met	Gly	Lys
65				70				75						80	
Ile	Glu	Leu	Ala	Ala	Val	Thr	Leu	Leu	Lys	Val	Ser	Asp	Glu	Ala	Glu

				85				90					95				
Ser	Asp	Ile	Leu	Gln	Lys	Ser	Lys	Leu	Arg	Gln	Asp	Gly	Leu	Ser	Leu		
			100					105					110				
Leu	Lys	Tyr	Val	Gln	Lys	Glu	Ser	Ser	Thr	Phe	Ser	Ile	Gln	Arg	Thr		
		115					120					125					
Asn	Leu	Ile	Arg	Met	Ile	Glu	Ile	Asn	Glu	Ser	Leu	Lys	Met				
	130					135					140						

<210> 9292

<211> 172

<212> PRT

<213> B.fragilis

<400> 9292

Met	Ser	Gln	Gln	Gln	Glu	Tyr	Trp	Phe	Ala	Ala	Arg	Thr	Arg	Lys	Asp		
1				5				10						15			
Gln	Glu	Leu	Thr	Thr	Arg	Asp	Ala	Leu	Glu	Lys	Ile	Gly	Val	Glu	Tyr		
			20					25					30				
Phe	Leu	Pro	Thr	Gln	Phe	Val	Ile	Arg	Gln	Leu	Lys	Tyr	Arg	Arg	Arg		
		35					40					45					
Arg	Val	Glu	Val	Pro	Ala	Ile	Arg	Asn	Leu	Ile	Phe	Val	His	Ala	Thr		
	50					55					60						
Lys	Glu	Phe	Ala	Cys	Ala	Ile	Ala	Asn	Glu	Tyr	Gly	Val	Arg	Leu	Phe		
65				70					75						80		
Tyr	Met	Arg	Asp	Phe	Asp	Thr	Lys	Ser	Met	Leu	Ile	Val	Pro	Asp	Lys		
				85					90					95			
Gln	Met	Lys	Asp	Phe	Met	Phe	Val	Met	Asn	Leu	Asp	Pro	Ala	Ala	Val		
			100					105						110			
Ile	Leu	Asn	Asp	Asp	Cys	Phe	Ala	Val	Gly	Thr	Lys	Val	Gln	Val	Ile		
		115					120						125				
Lys	Gly	Asp	Phe	Cys	Gly	Val	Glu	Gly	Glu	Leu	Ala	Ser	Leu	Ser	Asn		
	130					135					140						
Arg	Thr	Tyr	Val	Thr	Ile	Arg	Ile	Arg	Gly	Val	Leu	Ser	Ala	Ser	Val		
145					150					155					160		
Lys	Val	Pro	Lys	Ser	Tyr	Leu	Arg	Ile	Leu	Ala	Pro						
				165					170								

<210> 9293

<211> 367

<212> PRT

<213> B.fragilis

<400> 9293

Tyr	Met	Lys	Gln	Phe	Ile	Ala	Phe	Val	Lys	Lys	Glu	Phe	Phe	His	Ile		
1				5				10						15			
Phe	Arg	Asp	Arg	Arg	Thr	Met	Leu	Ile	Leu	Leu	Gly	Met	Pro	Val	Val		
			20					25					30				
Gln	Ile	Ile	Leu	Phe	Gly	Phe	Ala	Ile	Thr	Thr	Glu	Val	Lys	Asn	Val		
		35					40					45					
Arg	Val	Gly	Val	Leu	Asp	Pro	Ser	Asn	Asp	Ile	Val	Thr	Arg	Lys	Ile		
	50					55					60						
Ile	Asp	Arg	Leu	Asp	Ala	Ser	Glu	Tyr	Phe	Ser	Val	Lys	Cys	Leu	Leu		
65				70					75						80		
His	Ser	Pro	Gln	Glu	Met	Glu	Arg	Ala	Phe	Gln	Glu	Asn	Glu	Ile	Asp		
				85					90					95			
Met	Ala	Leu	Val	Phe	Ser	Glu	Gln	Phe	Ala	Asp	Arg	Leu	Tyr	Thr	Gly		
			100					105						110			
Asp	Ala	Arg	Val	Gln	Val	Val	Ser	Asp	Ala	Thr	Asp	Pro	Asn	Met	Ala		
			115					120						125			

Thr Thr Gln Ala Gly Tyr Ala Thr Gly Val Ile Ala Ala Val Arg Gln
 130 135 140
 Glu Met Leu Pro Pro Gly Met Ser Val Pro Ser Val Val Pro Asn Val
 145 150 155 160
 Lys Leu Leu Tyr Asn Pro Gln Met Lys Ser Ala Tyr Asn Phe Val Pro
 165 170 175
 Gly Val Met Gly Leu Ile Leu Met Leu Ile Cys Ala Met Met Thr Ser
 180 185 190
 Ile Ser Ile Val Arg Glu Lys Glu Thr Gly Thr Met Glu Ile Leu Leu
 195 200 205
 Val Ser Pro Val Lys Pro Leu Phe Ile Ile Leu Ala Lys Ala Val Pro
 210 215 220
 Tyr Phe Val Leu Ser Phe Val Asn Leu Thr Thr Ile Leu Leu Leu Ser
 225 230 235 240
 Val Tyr Val Leu Asp Val Pro Val Ala Gly Ser Leu Phe Trp Leu Ile
 245 250 255
 Met Val Ser Leu Leu Leu Ile Phe Val Ser Leu Ser Leu Gly Leu Leu
 260 265 270
 Ile Ser Thr Val Thr Arg Thr Gln Val Ala Ala Met Leu Ala Ser Gly
 275 280 285
 Leu Val Leu Met Met Pro Thr Met Leu Leu Ser Gly Met Ile Phe Ser
 290 295 300
 Ile Glu Ser Met Pro Leu Val Leu Gln Leu Ile Ser Asp Ile Leu Pro
 305 310 315 320
 Ala Arg Trp Tyr Ile Gln Ala Ala Arg Lys Leu Met Ile Glu Gly Val
 325 330 335
 Asp Ile Ser Leu Val Trp Thr Glu Val Ser Ile Leu Ala Leu Met Ala
 340 345 350
 Val Leu Leu Ile Thr Ile Ser Phe Lys Lys Phe Lys Asn Arg Leu
 355 360 365

<210> 9294

<211> 179

<212> PRT

<213> B.fragilis

<400> 9294

Leu Gly Arg His Arg Ser Gln Trp Leu Glu Thr Ala Ser Leu Leu Pro
 1 5 10 15
 Lys Met Trp Ser Leu Gln Asp Gln Tyr Asp Gln Phe Ala Gly Asn Arg
 20 25 30
 Gly Ser Ser Ser Arg Ile Ser Arg Leu Ala Thr Ser Arg Gly Thr Ile
 35 40 45
 Gly Glu Ser Val Thr Ser Phe Arg Leu Ser Val Val Leu Tyr Leu Gln
 50 55 60
 Asn Met Pro Lys Pro Gly Lys Leu Ala Ala Val Gly Asn Pro Leu Leu
 65 70 75 80
 Lys Val Ala Asp Ile Asp Gln Met Tyr Leu Arg Ala Tyr Ile Thr Ser
 85 90 95
 Glu Gln Leu Ser Leu Val Lys Leu Gly Asn Arg Val Thr Val Phe Ser
 100 105 110
 Asp Met Arg Gly Glu Glu Arg Lys Glu Tyr Pro Gly Val Val Thr Trp
 115 120 125
 Ile Ser Asp Arg Ser Glu Phe Thr Pro Lys Thr Ile Leu Thr Lys Glu
 130 135 140
 Glu Arg Ala Asn Leu Val Tyr Ala Val Lys Ile Ala Val Lys Asn Glu
 145 150 155 160
 Trp Thr Ser Glu Asp Arg Tyr Val Arg Arg Ser Glu Val Ile Asn Asp
 165 170 175

Ala Cys Leu

<210> 9295
 <211> 117
 <212> PRT
 <213> B.fragilis

<400> 9295
 His Ile Leu Asn Thr Cys Asn Leu Phe Thr Leu Glu Ile Val Lys Asn
 1 5 10 15
 Met Thr Phe Ile His Phe Met Gln Tyr Asn Ser Tyr Phe Cys Asn Lys
 20 25 30
 Ala Ile Leu Ile Met Thr Glu Lys Glu Lys Lys Glu Arg Thr Val Ile
 35 40 45
 His Leu Tyr Ile Lys Glu Asn Asp Thr His His Tyr Phe Gly Ser Ile
 50 55 60
 Ala Asn Val Phe Glu Tyr Phe Ser Pro Glu Glu Leu Gly Ile Thr Tyr
 65 70 75 80
 Gly Ser Leu Arg Asn Tyr Gly Leu Ser Asn Glu Asn Ser Tyr Gln Asn
 85 90 95
 Ser Lys Cys Ile Ile Arg Lys Gly Ile Leu Leu Ser Lys Ser Gly Asn
 100 105 110
 Arg Gly Lys Asn Arg
 115

<210> 9296
 <211> 93
 <212> PRT
 <213> B.fragilis

<400> 9296
 Phe Val Ser Lys Ser Phe Asp Leu Asn Leu Lys Asn Arg Lys Ile Thr
 1 5 10 15
 Lys Lys Trp Gly Arg Thr Asp Ala Phe Tyr Lys Thr Asn Leu Leu Lys
 20 25 30
 Asn Ala Ile Pro Gly Thr Glu Met Phe Glu Arg Gln Thr Val Thr Cys
 35 40 45
 Leu Pro Ala Tyr Lys His Ala Phe Ile Gln Leu Ala Leu Ser Ser Arg
 50 55 60
 Gly Lys Ala Val Leu Ser Ser Ile Cys Ile Val Leu Arg Asp Asn Ala
 65 70 75 80
 Arg Ser Asn Lys Thr Ala Glu Leu Leu Tyr Arg Phe Ile
 85 90

<210> 9297
 <211> 116
 <212> PRT
 <213> B.fragilis

<400> 9297
 Ser Ile Tyr Asn Asn Asp Met Gln Ala Ile Ile Leu Ser Ser Asn Thr
 1 5 10 15
 Ala Ile Arg Ala Glu Val Ile Thr Ile Arg Thr Asn Ala Arg Lys Ile
 20 25 30
 Asp Gly Ile Ser Lys Ala Val Leu Ile Glu Gln Leu Lys Glu Lys Leu
 35 40 45
 Lys Ser Gly Lys Ile Val Lys Phe Thr Tyr Leu Lys Ser Asn Gly Glu
 50 55 60

Val Arg Val Ala Phe Gly Thr Thr His Pro Asp Phe Val Lys Asp Lys
 65 70 75 80
 Val Cys Gly Trp Gly Ala Ser Arg Glu Ser Tyr Ala Thr Thr Ala Tyr
 85 90 95
 Phe Asp Leu Glu Lys Cys Asp Trp Arg Ser Phe Arg Trp Glu Asn Leu
 100 105 110
 Ile Ala Val Phe
 115

<210> 9298

<211> 424

<212> PRT

<213> B.fragilis

<400> 9298

Leu Asn Asp Lys Asn Met Lys Arg Gln Ile Val Ser Cys Gly Ile Phe
 1 5 10 15
 Ala Met Leu Leu Leu Ala Ser Cys Asn Gly Ala Gln Gln Thr Ser Glu
 20 25 30
 Val Asp Leu Ile Asp Ile Ala Gly Gly Met Glu Lys Leu Thr Glu Leu
 35 40 45
 Lys Val Ser Asp Leu Gly Lys Thr Ile Arg Tyr Ile Pro Leu Glu Thr
 50 55 60
 Thr Asp Ser Cys Leu Ile Gly Asp Phe Pro Asn Ile Lys Leu Leu Asp
 65 70 75 80
 Asp Lys Ile Met Val Tyr Asn Gly Lys Gln Cys Leu Leu Phe Asp Lys
 85 90 95
 Glu Thr Gly Lys Phe Ile Cys Ser Val Gly His Arg Gly Asp Asp Pro
 100 105 110
 Glu Ala Tyr Ser Ser Thr Cys Gly Tyr Leu Asn Ser Lys Asn Gln Leu
 115 120 125
 Leu Tyr Phe Asn Arg Asp Pro Asn Gln Leu Val Lys Tyr Asp Gln Lys
 130 135 140
 Gly Asn Phe Ala Gly Val Ile Thr Ile Pro Ser Pro Glu Thr Ser Thr
 145 150 155 160
 Gly Asn Ile Gln Ile Asn Arg Pro Gly Met Asn Gly Phe Val Phe Ser
 165 170 175
 Asp Ser Ile Ile Gly His Tyr Val Gly Gly Leu Gly Gln Arg Cys
 180 185 190
 Pro Ser Ser Val Leu Tyr Phe Ser Asp Lys Gly Asn Tyr Ile Asp Thr
 195 200 205
 Ile Pro Asn Ile Ile Pro Glu Leu Gly Thr Gly Gln Val Gly Asp Ile
 210 215 220
 Asn Asn Ile Ser Val Arg Lys Gly Phe Gly Leu Leu Glu Gly Ile Ile
 225 230 235 240
 Gln Ile Gln Tyr Asn Asn Gly Lys Gln Ser Ile Cys Val Pro Gly Tyr
 245 250 255
 Thr Ala Leu Trp Lys Cys Asn Asp Glu Ile Arg Phe Lys Glu Leu Phe
 260 265 270
 Thr Asp Thr Ile Tyr Thr Leu Lys His Asn Gln Leu Glu Lys Tyr Ile
 275 280 285
 Ile Phe Asn Thr Gly Lys Tyr Tyr Trp Pro Ala Ser Glu Arg Thr Leu
 290 295 300
 Thr Asp Asn Asn Ser Asp Arg Ile Met Ile Ser Tyr Ala Ile Glu Asn
 305 310 315 320
 Asp Lys Leu Leu Tyr Phe Gln Phe Ile Arg Gly Leu Tyr Thr Asp Lys
 325 330 335
 His Ile Leu Tyr Asn Gly Ile Tyr Asp Lys Asn Thr Lys Val Thr Asn
 340 345 350

Ile Ala Leu Ala Glu Lys Asn Phe Val Asp Asp Leu Thr His Phe Met
 355 360 365
 Pro Phe Thr Pro Ser Phe Leu Asn Glu Lys Gly Glu Cys Ala Ser Leu
 370 375 380
 Val Gln Ala Ala Asp Ile Leu Thr Trp Leu Glu Glu His Pro Glu Val
 385 390 395 400
 Lys Ile Glu Lys Glu Leu Gly Val Leu Lys Asn Leu Asn Glu Glu Ser
 405 410 415
 Asn Pro Val Val Val Leu Val Lys
 420

<210> 9299
 <211> 485
 <212> PRT
 <213> B.fragilis

<400> 9299

Ile Cys Pro Lys Phe Val Ile Lys Met Lys Thr Ser His Ile Ser Thr
 1 5 10 15
 Leu Ala Phe Ala Ile Leu Phe Ser Ser Ser Val Met Ala Gln Lys Thr
 20 25 30
 Asn Lys Pro Val Ser Glu Thr Val Gln Ser Glu Val Lys Ala Asp Thr
 35 40 45
 Leu Ser Glu Thr Leu Gln Gln Tyr Leu Val Leu Lys Leu Asn Leu Asp
 50 55 60
 Gly Pro Lys Pro Lys Ile Asp Thr Val Ser Ile Leu Tyr Asn Lys Tyr
 65 70 75 80
 Ile Gly Glu Leu Glu Tyr Leu Asn Asp Pro Ser Val Pro Met Arg Tyr
 85 90 95
 Ile Lys Thr Asp Pro Asp Tyr Tyr Arg Leu Phe Val Pro Leu Thr Tyr
 100 105 110
 Tyr Asn Ser Pro Ile Ala Glu Tyr Ser Thr Met His Trp Lys Phe Lys
 115 120 125
 Glu Pro Phe Val Thr Pro Ser Leu Ser Ser Gln Leu Leu Pro Pro Tyr
 130 135 140
 Asp Thr Leu Gln Phe Ser Lys Ala Glu Arg Ala Ser Arg Leu Val Asn
 145 150 155 160
 Val Ala Leu Met Asp Leu Tyr Leu Asn His Pro Asn Leu Val Val Asn
 165 170 175
 Thr Glu Asp His Ile Met Ser Arg Lys Leu Tyr His Gly Asp Lys Lys
 180 185 190
 Ile Glu Val Pro Lys Thr Glu Val Lys Ser Leu Phe Arg Ala Asp Lys
 195 200 205
 Val Glu Asp Asn Val Gly Glu Ala Glu Met Val Ile Ser Lys Pro Asn
 210 215 220
 Trp Trp Val Thr Gly Gly Asn Gly Ser Leu Gln Ile Thr Gln Asn Tyr
 225 230 235 240
 Ile Ser Asp Asn Trp Tyr Lys Gly Gly Glu Ser Asn Asn Ala Val Met
 245 250 255
 Ala Asn Leu Gln Leu Phe Ala Asn Tyr Asn Asp Arg Glu Lys Val Gln
 260 265 270
 Phe Glu Asn Leu Phe Glu Ala Lys Leu Gly Phe Asn Ser Ser Pro Ser
 275 280 285
 Asp Glu Tyr His Lys Tyr Leu Val Asn Thr Asp Gln Leu Arg Leu Tyr
 290 295 300
 Ser Lys Leu Gly Ile Gln Ala Ala Asn Asn Trp Tyr Tyr Thr Ile Thr
 305 310 315 320
 Gly Glu Phe Lys Thr Gln Phe Val Lys Gly Tyr Lys Ala Asn Ser Glu
 325 330 335

Glu Leu Val Ala Ala Phe Leu Ala Pro Ala Asp Val Ile Val Ser Val
 340 345 350
 Gly Met Asp Tyr Lys Leu Lys Lys Lys Lys Phe Asn Leu Ser Val Phe
 355 360 365
 Met Ser Pro Leu Thr Tyr Asn Leu Arg Tyr Ile Gly Asn Lys Asn Val
 370 375 380
 Asp Glu Thr Lys Phe Gly Leu Asp Lys Gly Lys Cys Ser Lys Asn Asp
 385 390 395 400
 Phe Gly Ala Gln Val Gln Pro Thr Ile Ser Trp Thr Ile Ile Pro Ser
 405 410 415
 Ile Val Val Asp Ser Arg Leu Asn Tyr Leu Thr Asn Tyr Lys Trp Val
 420 425 430
 Arg Val Glu Trp Glu Asn Thr Phe Asn Phe Val Leu Asn Arg Tyr Leu
 435 440 445
 Ser Thr Lys Leu Phe Val His Ala Arg Phe Asp Asp Ser Ala Lys Pro
 450 455 460
 Thr Thr Gly Ser Ser Tyr Phe Gln Leu Lys Glu Leu Leu Ser Phe Gly
 465 470 475 480
 Leu Asn Tyr Lys Trp
 485

<210> 9300

<211> 447

<212> PRT

<213> B.fragilis

<400> 9300

Thr Asp Tyr Asn Met Thr Thr Lys Tyr Thr Tyr Lys Glu Ile Trp Ile
 1 5 10 15
 Ile Ala Tyr Pro Ile Leu Ile Ser Leu Ile Met Glu Gln Leu Ile Gly
 20 25 30
 Met Thr Asp Thr Ala Phe Leu Gly Arg Val Gly Glu Val Glu Leu Gly
 35 40 45
 Ala Ser Ala Ile Ala Gly Val Tyr Tyr Leu Ala Ile Phe Met Met Ala
 50 55 60
 Phe Gly Phe Ser Ile Gly Ala Gln Ile Leu Ile Ala Arg Arg Asn Gly
 65 70 75 80
 Glu Gln Gln Tyr Gln Ala Ile Gly Pro Ile Phe Tyr Gln Gly Val Tyr
 85 90 95
 Phe Leu Leu Ser Leu Ala Val Val Ala Phe Thr Leu Ser Leu Cys Phe
 100 105 110
 Ser Pro His Ile Leu Lys Lys Val Ile Ser Ser Glu His Ile Tyr Asp
 115 120 125
 Ala Ser Ile Ser Tyr Ile Asn Trp Arg Val Phe Gly Phe Phe Phe Ser
 130 135 140
 Phe Val Gly Val Met Phe Arg Ala Phe Phe Val Gly Thr Thr Gln Thr
 145 150 155 160
 Lys Thr Leu Thr Leu Asn Ser Val Val Met Val Leu Ser Asn Val Val
 165 170 175
 Phe Asn Tyr Ile Leu Ile Phe Gly Lys Phe Gly Ala Pro Gln Leu Gly
 180 185 190
 Ile Ala Gly Ala Ala Ile Gly Ser Ser Leu Ala Glu Met Val Ser Val
 195 200 205
 Ile Phe Phe Val Ile Tyr Thr Trp Lys Arg Ile Asp Cys Lys Lys Tyr
 210 215 220
 Ala Leu Asn His Leu Pro Gly Phe Arg Pro Glu Met Leu Lys Arg Ile
 225 230 235 240
 Leu Asn Val Ser Phe Trp Thr Met Ile Gln Asn Phe Phe Ser Leu Ser
 245 250 255

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Thr Trp Phe Met Phe Phe Leu Phe Val Glu His Leu Gly Glu Arg Ala
 260 265 270
 Leu Ala Ile Thr Asn Ile Ile Arg Asn Val Ser Gly Ile Pro Phe Met
 275 280 285
 Val Thr Met Ala Phe Ala Ala Thr Cys Gly Ser Leu Val Ser Asn Leu
 290 295 300
 Ile Gly Ala Gly Glu Ile Lys Cys Val Pro Gly Thr Ile Arg Gln His
 305 310 315 320
 Ile Arg Ile Gly Tyr Ile Phe Val Leu Pro Leu Val Ile Leu Phe Ala
 325 330 335
 Leu Phe Pro Asn Leu Ile Leu Ser Ile Tyr Thr Asp Ile Pro Asp Leu
 340 345 350
 Arg Glu Ala Ser Ile Pro Ser Leu Trp Val Leu Cys Ser Ala Tyr Leu
 355 360 365
 Ile Leu Val Pro Ala Asn Val Tyr Phe Gln Ala Val Ser Gly Thr Gly
 370 375 380
 Asn Thr Arg Thr Ala Leu Gly Leu Glu Leu Cys Val Leu Ala Ile Tyr
 385 390 395 400
 Leu Ile Tyr Ile Thr Tyr Met Ile Leu Tyr Leu Arg Val Asp Val Ala
 405 410 415
 Val Cys Trp Thr Thr Glu His Leu Tyr Gly Ile Cys Ile Leu Phe Leu
 420 425 430
 Ser Tyr Leu Tyr Ile Lys Lys Gly Asn Trp Gln Lys Lys Gln Ile
 435 440 445

<210> 9301
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 <212> PRT
 <213> B.fragilis

<400> 9301
 Arg Ile Leu Asn Ile Lys Ser Phe Ile Met Val Ala Lys Gln Leu Ser
 1 5 10 15
 Ile Phe Leu Glu Asn Lys Ser Gly Arg Leu Thr Glu Val Thr Glu Val
 20 25 30
 Leu Ala Lys Glu Gly Ile Asn Leu Ser Ala Leu Cys Ile Ala Glu Asn
 35 40 45
 Ala Asp Phe Gly Ile Leu Arg Gly Ile Val Ser Asp Pro Asp Lys Ala
 50 55 60
 Tyr Lys Ala Leu Lys Asp Asn His Phe Ala Val Asn Val Thr Glu Val
 65 70 75 80
 Val Gly Ile Asn Cys Pro Asn Val Pro Gly Ala Leu Ala Lys Val Leu
 85 90 95
 Gln Tyr Leu Ser Asn Glu Gly Val Phe Ile Glu Tyr Met Tyr Ser Phe
 100 105 110
 Ala Asn Asn Asn Ser Ala Asn Val Ile Ile Arg Pro Asn Asp Met Glu
 115 120 125
 Asn Cys Ile Arg Val Leu Thr Glu Lys Lys Val Asp Leu Leu Ala Ala
 130 135 140
 Ser Asp Leu Tyr Lys Leu
 145 150

<210> 9302
 <211> 363
 <212> PRT
 <213> B.fragilis

<400> 9302
 Lys Glu Ile Lys Met Lys Lys Thr Leu Thr Val Asn Leu Gly Gly Thr

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1           5           10           15
Val Phe His Ile Asp Glu Asp Ala Tyr Arg Leu Leu Asp Asn Tyr Leu
20           25           30
Cys Asn Leu Arg Leu His Phe Arg Lys Gln Glu Gly Ala Glu Glu Ile
35           40           45
Val Asn Asp Ile Glu Asn Arg Ile Ser Glu Leu Phe Ala Glu Lys Leu
50           55           60
Ser Ala Gly Ser Gln Val Ile Thr Ile Ala Asp Val Glu Glu Val Ile
65           70           75           80
Ala Arg Met Gly Lys Pro Glu Asp Phe Gly Glu Asp Thr Glu Glu Glu
85           90           95
Glu Pro Lys Lys Thr Thr Gly Gln Thr Gly Ala Gln Gln Gly Ala Thr
100          105          110
Ile Arg Arg Arg Leu Tyr Arg Asn Pro Asp Asp Lys Ile Leu Gly Gly
115          120          125
Val Ile Ser Gly Leu Ala Ala Tyr Leu Asn Trp Asp Val Thr Val Leu
130          135          140
Arg Leu Ile Met Phe Val Val Leu Ile Cys Gly Tyr Gly Val Leu Ile
145          150          155          160
Pro Ile Tyr Ile Ile Cys Gly Val Val Ile Pro Glu Ala Arg Thr Ala
165          170          175
Ala Asp Lys Leu Asn Met Pro Gly Glu Asp Ile Thr Ile Glu Asn Ile
180          185          190
Gly Thr Thr Val Thr Asp Gly Phe Asp Arg Met Ala Asn Gly Val Asn
195          200          205
Asn Tyr Val Asn Ser Gly Lys Pro Arg Ser Phe Leu Gln Lys Val Arg
210          215          220
Asp Ala Leu Val Ser Ile Ala Gly Phe Leu Leu Lys Ala Cys Leu Val
225          230          235          240
Val Leu Ala Ile Ile Cys Ser Pro Val Leu Phe Val Leu Ala Ile Asp
245          250          255
Val Val Ala Leu Val Ile Ala Ala Ile Ala Val Ala Ile Gly Gly Gly
260          265          270
Ala Ala Leu Tyr Gln Met Leu Pro Ser Val Asp Trp Ser Pro Leu Ile
275          280          285
Ser Thr Ser Pro Met Met Thr Ile Ala Gly Ser Ile Ala Gly Val Val
290          295          300
Leu Ala Gly Ile Pro Leu Thr Ala Ile Ile Phe Val Ile Leu Arg Gln
305          310          315          320
Ile Phe Asn Trp Ser Pro Met Ser Ser Gly Leu Lys Trp Ser Leu Leu
325          330          335
Ile Ile Trp Ile Leu Ala Val Val Ile Phe Val Ile Asn Leu Ser Tyr
340          345          350
Leu Gly Trp Pro Tyr Pro Phe Leu Trp Val Gly
355          360

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<210> 9303
 <211> 259
 <212> PRT
 <213> B.fragilis

<400> 9303
 Tyr Met Gln Lys Leu Leu Phe Leu Phe Leu Leu Pro Leu Ile Pro Phe
 1 5 10 15
 Ser Phe Pro Cys His Ala Gln Thr Thr Tyr Arg Met Val Thr Arg Asn
 20 25 30
 Tyr Ser Pro Val Thr Asp Ser Tyr Pro Gln Glu Val Ser Asn Phe Lys
 35 40 45
 Lys Ala Asp Ser Val Tyr Tyr Phe Thr Val Lys Val Ser Lys Ala Tyr

50	Asp	Asp	Thr	Leu	Lys	Arg	Lys	Val	Ala	Glu	Lys	Val	Leu	Tyr	Ser	Pro
65						70					75					80
	Asn	Asp	Ile	Tyr	Asp	Gly	Glu	Val	Ala	Ser	Tyr	Leu	Asn	Pro	Thr	Arg
					85					90					95	
	Leu	Ile	Asp	Tyr	Ser	Ser	Pro	Thr	Ile	Glu	Leu	Ile	Thr	Asp	Ser	Leu
					100					105					110	
	Phe	Lys	Gly	Glu	Asp	Ser	Ile	Met	Thr	Ile	Ile	Arg	Lys	Gly	Leu	Glu
			115					120					125			
	Phe	Val	Ser	His	Tyr	Ile	Ser	Phe	Asp	Asp	Ser	Leu	Ala	Met	Ala	Ile
		130					135					140				
	Ser	Arg	Gly	Asp	Cys	Lys	Thr	Leu	Asp	Val	Asn	His	Ile	Leu	Gln	Arg
	145					150					155					160
	Lys	Lys	Gly	Thr	Cys	Ser	Glu	Tyr	Thr	Asn	Leu	Phe	Thr	Ala	Leu	Met
					165					170					175	
	Arg	Lys	Lys	Gly	Ile	Pro	Cys	Arg	Phe	Val	Ala	Gly	Phe	Ile	Phe	Ile
				180					185					190		
	Pro	Glu	Gln	Lys	Phe	Tyr	Gly	Cys	His	Ala	Trp	Ala	Glu	Cys	Tyr	Leu
			195				200						205			
	Lys	Gln	Tyr	Gly	Trp	Met	Ala	Val	Asp	Pro	Gln	Ser	Gly	Lys	Ser	Trp
	210					215					220					
	Leu	Pro	Thr	Thr	Ile	Ile	Arg	Leu	Phe	Ala	Gly	Thr	Asp	Tyr	Thr	Asp
	225					230					235					240
	Cys	Gly	Leu	Asn	Ser	Phe	Met	Asp	Leu	Val	Pro	Lys	Ser	Ile	Glu	Ile
					245					250					255	
	Val	Lys	Glu													

<210> 9304

<211> 237

<212> PRT

<213> B.fragilis

<400> 9304

Leu	Arg	Met	Lys	Arg	Asp	Gln	Leu	Lys	Ser	Leu	Leu	Leu	Gly	Ala	Ile
1			5					10					15		
Leu	Leu	Ala	Gly	Ile	Thr	Leu	Pro	Ala	Lys	Ala	Gln	Ile	Gly	Glu	Gln
			20					25					30		
Arg	His	Asn	Phe	Ala	Ile	Gly	Ile	Asn	Gly	Gly	Ala	Asn	Tyr	Ser	Thr
		35				40						45			
Val	Ser	Phe	Gln	Pro	Thr	Ile	Lys	Gln	Asn	Gly	Leu	Leu	Gly	Ile	Thr
	50					55					60				
Gly	Gly	Val	Thr	Ala	Arg	Tyr	Ile	Ser	Glu	Lys	Tyr	Phe	Ala	Met	Ile
65					70					75				80	
Cys	Gly	Ala	Gln	Leu	Glu	Leu	Asn	Phe	Ser	Gln	Arg	Gly	Trp	Asp	Glu
			85					90					95		
Lys	Phe	Asp	Pro	Glu	Gln	Gly	Phe	Ser	Ser	Glu	Asp	Ser	Tyr	Val	Arg
			100				105						110		
Thr	Met	Asn	Tyr	Leu	Glu	Ile	Pro	Phe	Leu	Ala	His	Leu	Ala	Phe	Gly
	115					120						125			
Lys	Asp	Lys	Gly	Val	Gln	Phe	Phe	Val	Asn	Leu	Gly	Pro	Gln	Ile	Gly
	130					135					140				
Leu	Leu	Leu	Asn	Glu	Ser	Glu	Lys	Arg	Lys	Gly	Thr	Trp	Glu	Thr	Ala
145					150					155					160
Asn	Arg	Ala	Pro	Asn	Glu	Gln	Tyr	Gly	Lys	Trp	Val	Glu	Asn	Lys	Phe
				165					170					175	
Asp	Tyr	Gly	Ile	Val	Gly	Gly	Gly	Gly	Ile	Glu	Val	Arg	Thr	Lys	Ala
			180					185					190		
Gly	Asn	Phe	Leu	Leu	Glu	Gly	Arg	Tyr	Tyr	Phe	Gly	Leu	Ala	Asp	Phe

195	200	205
Tyr Asn Ser Thr Lys Lys Asp Tyr Phe Ser Arg Ser Ala Asn Ser Thr		
210	215	220
Ile Thr Ala Lys Ile Thr Tyr Leu Phe Asp Ile Lys Lys		
225	230	235

<210> 9305
 <211> 200
 <212> PRT
 <213> B.fragilis

<400> 9305

Leu Lys Glu Asn Ile Met Ser Leu Lys Asn Ser Tyr Val Thr Ser Asp		
1	5	10
Tyr Ile Glu Trp Asp Thr Met Leu Ser Leu Val Arg Lys Leu Tyr Arg		
	20	25
Asp Lys Glu Tyr Arg Met Ser Leu Leu Ile Gly Cys Gly Ser Phe Phe		
	35	40
Gly Leu Arg Ile Ser Asp Ile Leu Thr Leu Thr Trp Ser Met Leu Leu		
	50	55
Asp Asp Glu Lys Phe Val Ile Ile Glu Lys Lys Thr Gly Lys Arg Arg		
65	70	75
Glu Ile Lys Ile Asn Ser Asn Phe Gln Lys His Ile Ala Asp Cys Tyr		
	85	90
Met Ala Leu Gly Val Thr Asp Lys Asn Glu Lys Cys Phe Leu Ser Arg		
	100	105
Lys Lys Thr Val Tyr Ser Thr Gln Arg Ile Asn Val Leu Phe Lys Ser		
	115	120
Ile Lys Ser Lys Tyr Gly Leu Lys Val Glu His Phe Ser Thr His Ser		
	130	135
Met Arg Lys Thr Phe Gly Arg Lys Val Val Glu Ala Ala Gly Glu Asn		
145	150	155
Ser Glu Phe Ala Leu Ile Lys Leu Ser Glu Leu Phe Asn His Ala Asp		
	165	170
Val Met Thr Thr Arg Arg Tyr Leu Gly Leu Arg Thr Gln Glu Leu Leu		
	180	185
Glu Thr Tyr Asp Met Leu Ser Phe		
195	200	

<210> 9306
 <211> 546
 <212> PRT
 <213> B.fragilis

<400> 9306

Trp Lys Ile Asp Asn Arg Glu Leu Ser Leu Pro Thr Phe Cys Gly Cys		
1	5	10
Ala Gln Pro Ser Thr Ile His Phe Leu Tyr Phe Asn Lys Ile Gln Met		
	20	25
Ala Glu Gln Arg Arg Asn Thr Arg Ser Thr Ala Lys Ser Lys Val Gln		
	35	40
Pro Val Asn Asp Tyr Gly Arg Ile Gln Pro Gln Ala Pro Glu Leu Glu		
	50	55
Glu Ala Val Leu Gly Ala Leu Met Ile Glu Lys Asp Ala Tyr Ser Leu		
65	70	75
Val Ser Glu Ile Leu Arg Pro Glu Ser Phe Tyr Glu His Arg His Gln		
	85	90
Leu Ile Tyr Ala Ala Ile Thr Asp Leu Ala Val Asn Gln Lys Pro Val		
	100	105
		110

Asp	Ile	Leu	Thr	Val	Lys	Glu	Gln	Leu	Ser	Lys	Arg	Gly	Glu	Leu	Glu
		115					120					125			
Glu	Val	Gly	Gly	Pro	Phe	Tyr	Ile	Thr	Gln	Leu	Ser	Ser	Lys	Val	Ala
		130				135					140				
Ser	Ser	Ala	His	Ile	Glu	Tyr	His	Ala	Arg	Ile	Ile	Ala	Gln	Lys	Tyr
145					150					155					160
Leu	Ala	Arg	Glu	Leu	Ile	Thr	Phe	Thr	Ser	Asn	Ile	Gln	Ser	Lys	Ala
				165					170					175	
Phe	Asp	Glu	Thr	Leu	Asp	Val	Asp	Asp	Leu	Met	Gln	Glu	Ala	Glu	Gly
			180					185					190		
Lys	Leu	Phe	Glu	Ile	Ser	Gln	Arg	Asn	Met	Lys	Lys	Asp	Tyr	Thr	Gln
		195					200					205			
Ile	Asn	Pro	Ile	Ile	Ala	Glu	Ala	Tyr	Glu	Gln	Ile	Gln	Lys	Ala	Ala
	210					215					220				
Ala	Arg	Thr	Asp	Gly	Leu	Ser	Gly	Leu	Glu	Ser	Gly	Tyr	Thr	Lys	Leu
225					230					235					240
Asp	Lys	Met	Thr	Ser	Gly	Trp	Gln	Lys	Ser	Asp	Leu	Ile	Ile	Ile	Ala
				245					250					255	
Ala	Arg	Pro	Ala	Met	Gly	Lys	Thr	Ala	Phe	Val	Leu	Ser	Met	Ala	Lys
			260					265					270		
Asn	Ile	Ala	Val	Asn	Phe	Arg	Asn	Pro	Val	Ala	Leu	Phe	Ser	Leu	Glu
		275					280					285			
Met	Ser	Asn	Val	Gln	Leu	Val	Asn	Arg	Leu	Ile	Ser	Asn	Val	Cys	Glu
	290				295					300					
Ile	Pro	Ser	Glu	Lys	Ile	Lys	Ser	Gly	Gln	Leu	Ala	Ala	Tyr	Glu	Trp
305					310					315					320
Gln	Gln	Leu	Asp	Tyr	Lys	Leu	Lys	Asp	Leu	Leu	Asp	Ala	Pro	Leu	Tyr
				325					330					335	
Val	Asp	Asp	Thr	Pro	Ser	Leu	Ser	Val	Phe	Glu	Leu	Arg	Thr	Lys	Ala
			340					345						350	
Arg	Arg	Leu	Val	Arg	Glu	His	Gly	Val	Arg	Ile	Ile	Ile	Ile	Asp	Tyr
		355					360					365			
Leu	Gln	Leu	Met	Asn	Ala	Ser	Gly	Met	Ala	Phe	Gly	Ser	Arg	Gln	Glu
	370					375					380				
Glu	Val	Ser	Thr	Ile	Ser	Arg	Ser	Leu	Lys	Gly	Leu	Ala	Lys	Glu	Leu
385					390					395					400
Asn	Ile	Pro	Ile	Ile	Ala	Leu	Ser	Gln	Leu	Asn	Arg	Gly	Val	Glu	Ser
				405					410					415	
Arg	Glu	Gly	Leu	Glu	Gly	Lys	Arg	Pro	Gln	Leu	Ser	Asp	Leu	Arg	Glu
			420					425					430		
Ser	Gly	Ala	Ile	Glu	Gln	Asp	Ala	Asp	Met	Val	Cys	Phe	Ile	His	Arg
		435					440					445			
Pro	Glu	Tyr	Tyr	Lys	Ile	Phe	Gln	Asp	Asp	Lys	Gly	Asn	Asp	Leu	Arg
	450					455					460				
Gly	Met	Ala	Glu	Ile	Ile	Ile	Ala	Lys	His	Arg	Asn	Gly	Ala	Val	Gly
465					470					475					480
Asp	Val	Leu	Leu	Arg	Phe	Lys	Gly	Glu	Tyr	Thr	Arg	Phe	Gln	Asn	Pro
				485					490					495	
Asp	Asp	Asp	Met	Val	Ile	Pro	Leu	Pro	Asp	Ala	Gly	Ala	Met	Leu	Gly
			500					505					510		
Ser	Arg	Met	Asn	Asn	Thr	Gly	Thr	Val	Pro	Pro	Pro	Pro	Ala	Glu	Phe
		515					520						525		
Ala	Pro	Gln	Asn	Ser	Asn	Pro	Phe	Gly	Gly	Glu	Asn	Asp	Gly	Pro	Leu
	530					535					540				
Pro	Phe														
545															

<210> 9307

<211> 105

<212> PRT
 <213> B.fragilis

<400> 9307

Asn	Glu	Asp	Asp	Met	Lys	Arg	Tyr	Asn	Lys	Gln	Gln	Val	Met	Lys	Asp
1				5					10					15	
Ala	His	Arg	Leu	Tyr	Lys	Asn	Asp	Phe	Gln	Arg	Arg	Gly	Arg	Ser	Trp
			20					25					30		
Gly	Glu	Cys	Leu	Lys	Ala	Ala	Trp	Ser	Trp	Glu	Lys	Asp	Ala	Val	Arg
		35					40					45			
Val	Arg	Glu	Glu	Lys	Ala	Ala	Arg	Leu	Asp	Ala	Met	Ile	Ala	Ala	Ser
	50					55					60				
Trp	Ala	Ala	His	Asn	Ala	His	Lys	Asn	Glu	Lys	Ser	Asn	Lys	Lys	Glu
65					70					75					80
Phe	Glu	Asp	Leu	Ser	Ser	Asp	Ala	Val	Ser	Tyr	Ala	Met	Gly	Tyr	Gly
				85					90					95	
Arg	Gly	Asn	Gly	Phe	Tyr	Cys	Gly	Asp							
			100					105							

<210> 9308
 <211> 244
 <212> PRT
 <213> B.fragilis

<400> 9308

Gln	Arg	Leu	Glu	Gln	Gly	Val	Ala	Pro	Phe	Phe	Met	Leu	Ser	Asn	Gln
1				5					10					15	
Leu	Ser	His	Gln	Ile	Leu	Ile	Phe	Ala	Gln	His	Pro	Glu	Tyr	Arg	Lys
			20					25					30		
Met	Lys	Lys	Ile	Val	Leu	Met	Gly	Ile	Pro	Leu	Leu	Leu	Ile	Val	Leu
		35					40					45			
Val	Ile	Thr	Ile	Tyr	Val	Cys	Asn	Arg	Thr	Ile	Gln	Lys	Asn	Ser	Glu
	50					55					60				
Thr	Tyr	Ile	Tyr	Ser	Thr	Val	Ser	Asp	Ile	Pro	Tyr	Asn	Lys	Val	Gly
65					70					75					80
Leu	Leu	Leu	Gly	Thr	Ser	Pro	Lys	Leu	Lys	Ser	Gly	Lys	Ala	Asn	Leu
				85					90					95	
Tyr	Phe	Asp	Tyr	Arg	Ile	Lys	Ala	Ala	Thr	Glu	Leu	Tyr	Asn	Ala	Gly
			100				105						110		
Lys	Val	Lys	Tyr	Ile	Leu	Val	Ser	Gly	Asp	Asn	Arg	Arg	Asn	Ser	Tyr
		115					120					125			
Asn	Glu	Pro	Glu	Glu	Met	Lys	Lys	Ala	Leu	Ile	Ala	Ala	Gly	Ile	Pro
	130					135					140				
Asp	Gln	Arg	Ile	Ile	Leu	Asp	Tyr	Ala	Gly	Leu	Arg	Thr	Leu	Asp	Ser
145					150					155					160
Val	Val	Arg	Ala	His	Leu	Ile	Phe	Gly	Leu	Glu	Arg	Phe	Thr	Leu	Ile
				165					170					175	
Ser	Gln	Gln	Phe	His	Asn	Glu	Arg	Ala	Ile	Tyr	Leu	Ala	Gln	Gln	Ser
			180					185					190		
His	Leu	Gln	Ala	Ile	Gly	Tyr	Asn	Ala	Gln	Asp	Val	Ser	Ala	Tyr	Ala
	195						200					205			
Gly	Phe	Lys	Thr	Asn	Leu	Arg	Glu	Leu	Leu	Ala	Arg	Val	Lys	Val	Phe
	210				215						220				
Val	Asp	Ile	Val	Thr	Asn	Lys	Ala	Pro	Lys	His	Leu	Gly	Glu	Lys	Val
225					230					235					240
Lys	Ile	Pro	Glu												

<210> 9309

<211> 192
 <212> PRT
 <213> B.fragilis

<400> 9309

Thr	Ile	Met	Glu	Tyr	Ile	Leu	Ile	Phe	Ile	Ser	Ala	Ile	Phe	Val	Asn
1			5						10					15	
Asn	Ile	Val	Leu	Ser	Gln	Phe	Leu	Gly	Ile	Cys	Pro	Phe	Leu	Gly	Val
		20						25					30		
Ser	Lys	Lys	Val	Asp	Thr	Ala	Leu	Gly	Met	Ser	Ala	Ala	Val	Ala	Phe
		35					40					45			
Val	Leu	Thr	Ile	Ala	Thr	Ile	Val	Thr	Phe	Leu	Ile	Gln	Lys	Phe	Val
	50					55					60				
Leu	Asp	Ala	Phe	Gly	Leu	Gln	Tyr	Leu	Gln	Thr	Ile	Thr	Phe	Ile	Leu
65					70					75					80
Val	Ile	Ala	Ala	Leu	Val	Gln	Met	Val	Glu	Ile	Ile	Leu	Lys	Lys	Val
				85					90					95	
Ser	Pro	Ala	Leu	Tyr	Gln	Ala	Leu	Gly	Val	Phe	Leu	Pro	Leu	Ile	Thr
			100					105					110		
Thr	Asn	Cys	Cys	Ile	Leu	Gly	Val	Ala	Ile	Leu	Val	Ile	Gln	Lys	Asp
	115						120						125		
Tyr	Asp	Leu	Leu	Thr	Gly	Val	Val	Tyr	Ala	Phe	Ser	Thr	Ala	Ile	Gly
	130					135						140			
Phe	Gly	Leu	Ala	Leu	Val	Leu	Phe	Ala	Gly	Leu	Arg	Glu	Gln	Met	Ser
145					150					155					160
Leu	Val	Lys	Ile	Pro	Glu	Gly	Met	Lys	Gly	Thr	Pro	Ile	Ala	Leu	Ile
				165					170					175	
Thr	Ala	Gly	Leu	Leu	Ala	Met	Ala	Phe	Met	Gly	Phe	Ser	Gly	Val	Val
			180					185						190	

<210> 9310
 <211> 943
 <212> PRT
 <213> B.fragilis

<400> 9310

Asn	Met	Gln	Glu	Thr	Glu	Tyr	Ile	Asn	Val	Tyr	Gly	Ala	Arg	Val	His
1			5						10					15	
Asn	Leu	Lys	Asp	Ile	Asp	Ala	Glu	Ile	Pro	Arg	Asn	Ser	Leu	Thr	Val
		20						25					30		
Ile	Thr	Gly	Leu	Ser	Gly	Ser	Gly	Lys	Ser	Ser	Leu	Ala	Phe	Asp	Thr
		35					40					45			
Ile	Phe	Ala	Glu	Gly	Gln	Arg	Arg	Tyr	Ile	Glu	Thr	Phe	Ser	Ala	Tyr
	50					55					60				
Ala	Arg	Asn	Phe	Leu	Gly	Asn	Leu	Glu	Arg	Pro	Asp	Val	Asp	Lys	Ile
65					70					75					80
Thr	Gly	Leu	Ser	Pro	Val	Ile	Ser	Ile	Glu	Gln	Lys	Thr	Thr	Asn	Lys
				85					90					95	
Asn	Pro	Arg	Ser	Thr	Val	Gly	Thr	Thr	Thr	Glu	Ile	Tyr	Asp	Tyr	Leu
			100				105						110		
Arg	Leu	Leu	Tyr	Ala	Arg	Ala	Gly	Ile	Ala	Tyr	Ser	Tyr	Leu	Ser	Gly
		115					120						125		
Glu	Lys	Met	Val	Lys	Tyr	Thr	Glu	Glu	Gln	Ile	Leu	Glu	Leu	Ile	Leu
	130					135						140			
Lys	Asp	Tyr	Lys	Gly	Lys	Lys	Ile	Tyr	Met	Leu	Ala	Pro	Leu	Val	Arg
145					150					155					160
Ser	Arg	Lys	Gly	His	Tyr	Lys	Glu	Leu	Phe	Glu	Gln	Ile	Arg	Lys	Lys
				165					170					175	
Gly	Tyr	Leu	Tyr	Val	Arg	Ile	Asp	Gly	Glu	Val	Arg	Glu	Ile	Thr	His

2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100	2101	2102	2103	2104	2105	2106	2107	2108	2109	2110	2111	2112	2113	2114	2115	2116	2117	2118	2119	2120	2121	2122	2123	2124	2125	2126	2127	2128	2129	2130	2131	2132	2133	2134	2135	2136	2137	2138	2139	2140	2141	2142	2143	2144	2145	2146	2147	2148	2149	2150	2151	2152	2153	2154	2155	2156	2157	2158	2159	2160	2161	2162	2163	2164	2165	2166	2167	2168	2169	2170	2171	2172	2173	2174	2175	2176	2177	2178	2179	2180	2181	2182	2183	2184	2185	2186	2187	2188	2189	2190	2191	2192	2193	2194	2195	2196	2197	2198	2199	2200	2201	2202	2203	2204	2205	2206	2207	2208	2209	2210	2211	2212	2213	2214	2215	2216	2217	2218	2219	2220	2221	2222	2223	2224	2225	2226	2227	2228	2229	2230	2231	2232	2233	2234	2235	2236	2237	2238	2239	2240	2241	2242	2243	2244	2245	2246	2247	2248	2249	2250	2251	2252	2253	2254	2255	2256	2257	2258	2259	2260	2261	2262	2263	2264	2265	2266	2267	2268	2269	2270	2271	2272	2273	2274	2275	2276	2277	2278	2279	2280	2281	2282	2283	2284	2285	2286	2287	2288	2289	2290	2291	2292	2293	2294	2295	2296	2297	2298	2299	2300	2301	2302	2303	2304	2305	2306	2307	2308	2309	2310	2311	2312	2313	2314	2315	2316	2317	2318	2319	2320	2321	2322	2323	2324	2325	2326	2327	2328	2329	2330	2331	2332	2333	2334	2335	2336	2337	2338	2339	2340	2341	2342	2343	2344	2345	2346	2347	2348	2349	2350	2351	2352	2353	2354	2355	2356	2357	2358	2359	2360	2361	2362	2363	2364	2365	2366	2367	2368	2369	2370	2371	2372	2373	2374	2375	2376	2377	2378	2379	2380	2381	2382	2383	2384	2385	2386	2387	2388	2389	2390	2391	2392	2393	2394	2395	2396	2397	2398	2399	2400	2401	2402	2403	2404	2405	2406	2407	2408	2409	2410	2411	2412	2413	2414	2415	2416	2417	2418	2419	2420	2421	2422	2423	2424	2425	2426	2427	2428	2429	2430	2431	2432	2433	2434	2435	2436	2437	2438	2439	2440	2441	2442	2443	2444	2445	2446	2447	2448	2449	2450	2451	2452	2453	2454	2455	2456	2457	2458	2459	2460	2461	2462	2463	2464	2465	2466	2467
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Pro Ile Leu Ser Gln Lys Phe Tyr Arg Ser Leu Gln Asp Pro Leu Glu
 660 665 670
 Tyr Asp Ser Ile Glu Gly Leu Glu Asn Ile Asp Lys Val Val Asn Val
 675 680 685
 Asp Gln Ser Pro Leu Gly Arg Thr Pro Arg Ser Asn Pro Ala Thr Tyr
 690 695 700
 Thr Gly Val Phe Ser Asp Ile Arg Ser Leu Phe Val Gly Leu Pro Glu
 705 710 715 720
 Ala Lys Ile Arg Gly Tyr Lys Pro Gly Arg Phe Ser Phe Asn Val Ser
 725 730 735
 Gly Gly Arg Cys Glu Ala Cys Ser Gly Asn Gly Tyr Lys Thr Ile Glu
 740 745 750
 Met Asn Phe Leu Pro Asp Val Tyr Val Pro Cys Glu Val Cys His Gly
 755 760 765
 Lys Arg Tyr Asn Arg Glu Thr Leu Glu Val Arg Phe Lys Gly Lys Ser
 770 775 780
 Ile Ala Asp Val Leu Asp Met Thr Ile Asn Arg Ala Val Glu Phe Phe
 785 790 795 800
 Glu Asn Val Pro Gln Ile Leu Asn Lys Ile Lys Thr Ile Gln Asp Val
 805 810 815
 Gly Leu Gly Tyr Ile Lys Leu Gly Gln Ser Ser Thr Thr Leu Ser Gly
 820 825 830
 Gly Glu Ser Gln Arg Val Lys Leu Ala Thr Glu Leu Ser Lys Arg Asp
 835 840 845
 Thr Gly Lys Thr Leu Tyr Ile Leu Asp Glu Pro Thr Thr Gly Leu His
 850 855 860
 Phe Glu Asp Ile Arg Val Leu Met Gly Val Leu Asn Lys Leu Val Asp
 865 870 875 880
 Lys Gly Asn Thr Val Ile Val Ile Glu His Asn Leu Asp Val Ile Lys
 885 890 895
 Met Ala Asp Tyr Ile Ile Asp Met Gly Pro Glu Gly Gly Lys Gly Gly
 900 905 910
 Gly Glu Leu Leu Ser Phe Gly Thr Pro Glu Glu Val Ala Lys Ser Asn
 915 920 925
 Lys Gly Tyr Thr Pro Lys Phe Leu Arg Glu Glu Leu Lys Ile Asn
 930 935 940

<210> 9311

<211> 202

<212> PRT

<213> B.fragilis

<400> 9311

Ile Arg Lys Glu Tyr Lys Asp Met Asn Asn Phe Lys Val Leu Met Asn
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 Gly Ile Val Lys Glu Asn Pro Thr Phe Val Leu Leu Leu Gly Met Cys
 20 25 30
 Pro Thr Leu Gly Thr Thr Ser Ser Ala Ile Asn Gly Met Gly Met Gly
 35 40 45
 Leu Ala Thr Met Phe Val Leu Ile Cys Ser Asn Val Val Ile Ser Leu
 50 55 60
 Ile Lys Asn Leu Ile Pro Asp Met Val Arg Ile Pro Ser Phe Ile Val
 65 70 75 80
 Val Ile Ala Ser Phe Val Thr Leu Leu Gln Met Val Met Gln Ala Tyr
 85 90 95
 Val Pro Gly Leu Tyr Ala Thr Leu Gly Leu Phe Ile Pro Leu Ile Val
 100 105 110
 Val Asn Cys Ile Val Leu Gly Arg Ala Glu Ala Phe Ala Ala Lys Asn
 115 120 125

Asn Ala Leu Ser Ser Met Phe Asp Gly Ile Gly Met Gly Leu Gly Phe
 130 135 140
 Thr Ile Ala Leu Thr Leu Leu Gly Ala Val Arg Glu Phe Leu Gly Thr
 145 150 155 160
 Gly Lys Val Phe Asn Leu Ser Ile Ile Pro Glu Glu Tyr Gly Met Leu
 165 170 175
 Val Phe Val Leu Ala Pro Gly Ala Phe Ile Ala Leu Gly Tyr Leu Ile
 180 185 190
 Ala Leu Ile Asn Ser Leu Lys Lys Ala Asn
 195 200

<210> 9312
 <211> 115
 <212> PRT
 <213> B.fragilis

<400> 9312
 Lys Ile Glu Leu Met Asn Val Asp Asn Val Lys Ser Gln Met Arg Lys
 1 5 10 15
 Gly Met Leu Glu Tyr Cys Ile Met Leu Leu Leu His Lys Glu Pro Ala
 20 25 30
 Tyr Ala Ser Asp Ile Ile Gln Lys Leu Lys Glu Ala Arg Leu Ile Val
 35 40 45
 Val Glu Gly Thr Leu Tyr Pro Leu Leu Thr Arg Leu Lys Asn Asp Asp
 50 55 60
 Leu Leu Ser Tyr Glu Trp Val Glu Ser Thr Gln Gly Pro Pro Arg Lys
 65 70 75 80
 Tyr Tyr Lys Leu Thr Gly Lys Gly Glu Ser Phe Leu Gly Glu Leu Glu
 85 90 95
 Ala Ser Trp Lys Glu Leu Asn Glu Thr Val Asn His Ile Ala Asn Arg
 100 105 110
 Glu Ser Ile
 115

<210> 9313
 <211> 705
 <212> PRT
 <213> B.fragilis

<400> 9313
 Asn Leu Gly Leu Gly Leu Phe Ile Ser Ile Phe Val Ser Ile Leu Ile
 1 5 10 15
 Asp Ile Asp Val Ile Asn Ser Ala Lys Ile Met Asn Asn Met Asp Lys
 20 25 30
 Lys Ile Leu Ile Tyr Cys Arg Val Ser Thr Gln Gln Gln Thr Thr Asp
 35 40 45
 Arg Gln Lys Glu Glu Leu Leu Lys Phe Ala Glu Asp Asn His Trp Asn
 50 55 60
 Val Ala Glu Glu Asp Ile Phe Ile Asp Val Ile Ser Gly Phe Lys Lys
 65 70 75 80
 Gly Glu Phe Arg Pro Glu Tyr Ala Lys Met Leu Glu Arg Val Glu Tyr
 85 90 95
 Gly Asp Ile Asp Ile Ile Leu Phe Ser Glu Phe Ser Arg Leu Ala Arg
 100 105 110
 Asn Ala Thr Glu Leu Leu Glu Gln Ile Lys Leu Phe Ile Asp Lys Gly
 115 120 125
 Ile Asn Leu Tyr Phe Asp Lys Gln Lys Leu Trp Val Lys Asp Thr Asn
 130 135 140
 Lys Asp Val Gly Ser Leu Ile Leu Leu His Val Leu Ala Val Met Ser

145		150		155		160
Ser Tyr Glu Ile Glu	Leu Phe Val Glu Arg	Ser Leu Ser Gly Lys Ile				
	165	170		175		
Thr Lys Val Gln Ala Gly His Gly Gly Asp Glu Arg Ala Tyr Gly						
	180	185		190		
Tyr Met His Asn Glu Asn Lys Gln Ile Val Ile Asn Pro Ile Glu Ser						
	195	200		205		
Lys Ile Val Ala Arg Ile Phe Glu Met Tyr Val Gly Gly Tyr Ser Ser						
	210	215		220		
Ile Gln Ile Ser Glu Ile Leu Asn Ala Glu Lys Val Pro Ala Pro Tyr						
225	230	235		240		
Val Arg Lys Leu Asn Glu Tyr Lys Lys Asn Arg Glu Ala Lys Gly Leu						
	245	250		255		
Glu Val Lys Glu Tyr Lys Phe Asp Thr Asp Asn Leu Lys Trp Arg Ile						
	260	265		270		
Ser Thr Ile Asn Arg Leu Met His Asn Glu Leu Tyr Lys Gly Asn Arg						
	275	280		285		
Arg Ile Thr Phe Tyr Lys Pro Asp Pro Thr Asn Pro Leu Pro Leu Ser						
	290	295		300		
Glu Arg Gln Asp Arg Glu Ile Val Tyr Glu Tyr Ser Glu His Val Glu						
305	310	315		320		
Ser Leu Arg Ile Val Ser Asp Glu Leu Phe Gln Gln Ala Gln Asp Lys						
	325	330		335		
Leu Ser Lys Ala His Tyr Asn Lys Asn Asn Ala Val Arg His Glu Asn						
	340	345		350		
Leu Leu Lys His Leu Met Val Cys Gly Glu Cys Gly Ala Asn Phe Ser						
	355	360		365		
Val Gly Lys Ser Asn Glu Thr Ser Lys Asn Tyr Ile Ser Gly Gly Arg						
	370	375		380		
Thr Tyr Lys Cys Tyr Gly Arg Val Asn Arg Lys Asp Lys Pro Arg Thr						
385	390	395		400		
Cys Thr Asn Gly Ala Glu Leu Arg Gln Trp Lys Leu Asp Gly Leu Val						
	405	410		415		
Leu Gln Leu Ser Ile Gln Met Phe Ala Glu Ile Asn Ile Gln Gln Thr						
	420	425		430		
Asn Ile Leu Lys Ile Glu Asn Leu Gly Lys Glu Ile Glu Glu Leu Val						
	435	440		445		
Gln Ile Lys Ser Ser Lys Asn Thr Glu Leu Val Glu Ala Glu Asn Leu						
	450	455		460		
Tyr Lys Lys Thr Leu Lys Arg Leu Ile Ala Ile Glu Asp Asp Glu Val						
465	470	475		480		
Ala Lys Asn Leu Ile Ser Asp Ala Lys His Lys Tyr Asp Glu Thr Lys						
	485	490		495		
Asn Met Leu Asn Lys Thr Ile Asp Lys Leu Ser Arg Glu Ile Thr Thr						
	500	505		510		
Lys Arg Ile Thr Ile Asp Asn Leu Lys Arg Leu Asn Ala Asn Pro Leu						
	515	520		525		
Leu Ile Asn Lys Met Asp Glu Ile Arg Lys Asp Arg Asn Leu Val Lys						
	530	535		540		
Thr Met Val Asp Glu Tyr Ile Asp Lys Ile Thr Ile Phe Arg Leu His						
545	550	555		560		
Glu Leu Trp Leu Leu Val Val Val Ser Tyr Lys Gly Gly Glu Glu Met						
	565	570		575		
Trp Gly Thr Ile Lys Cys Ala Arg Tyr Lys Lys Glu Glu Met Phe Tyr						
	580	585		590		
Asp Glu Leu His Cys His Tyr Gly Val Glu Phe Gln Gly Trp Leu Leu						
	595	600		605		
Asn Asn Thr Glu Arg Cys Phe Ser Tyr Asp Lys Asn Thr His Ile Ile						
	610	615		620		

Thr Tyr Asn Gly Glu Ser Lys Ile Tyr Val Glu Phe Lys Ser Gly Glu
 625 630 635 640
 Tyr Asn Tyr Asp Thr Phe Asn Gln Met Ile Gln Glu Thr Gly Trp Met
 645 650 655
 Gly Cys Phe Pro Phe Tyr Ala Tyr Glu Asp Ser Gly Lys Asp Leu Ser
 660 665 670
 Val Pro Ser Asn Glu Asp Phe Gly Lys Ser Leu Gln Glu Asn Arg Ile
 675 680 685
 Asp Trp Lys Ala His Asn Glu Lys Val Leu Glu Arg Leu Leu Ser Lys
 690 695 700
 Ser
 705

<210> 9314
 <211> 116
 <212> PRT
 <213> B.fragilis

<400> 9314
 Ile Ile Asn Arg Phe Met Asp Tyr Lys Lys Thr Asn Ala Pro Thr Asn
 1 5 10 15
 Thr Ile Thr Arg Asp Met Met Asp Leu Cys Ala Asp Thr Gly Asn Val
 20 25 30
 Tyr Glu Thr Val Ala Ile Ile Gly Lys Arg Ala Asn Gln Ile Ser Val
 35 40 45
 Glu Ile Lys Asn Asp Leu Ser Lys Lys Leu Ala Glu Phe Ala Ser Tyr
 50 55 60
 Asn Asp Asn Leu Glu Glu Val Phe Glu Asn Arg Glu Gln Ile Glu Ile
 65 70 75 80
 Ser Arg Tyr Tyr Glu Lys Leu Pro Lys Pro Asn Leu Ile Ala Ala Gln
 85 90 95
 Glu Tyr Val Glu Gly Lys Ile Tyr Tyr Arg Asn Pro Ala Lys Glu Lys
 100 105 110
 Glu Lys Leu Gln
 115

<210> 9315
 <211> 334
 <212> PRT
 <213> B.fragilis

<400> 9315
 Lys Ile Ile Ser Met Glu Asn Lys Leu Ile Val Ser Leu Ser Pro His
 1 5 10 15
 Val His Gly Gly Asp Ser Val Gln Lys Asn Met Tyr Gly Val Leu Ile
 20 25 30
 Ala Leu Ile Pro Ala Phe Ile Val Ser Leu Val Tyr Phe Gly Leu Gly
 35 40 45
 Ala Leu Ile Val Thr Ala Thr Ser Val Ile Ala Cys Leu Phe Phe Glu
 50 55 60
 Trp Ala Ile Gly Lys Phe Leu Leu Lys Lys Glu Thr Thr Thr Ile Cys
 65 70 75 80
 Asp Gly Ser Ala Val Ile Thr Gly Val Leu Leu Ala Phe Asn Leu Pro
 85 90 95
 Ser Asn Leu Pro Val Trp Ile Ile Ile Leu Gly Ala Leu Phe Ala Ile
 100 105 110
 Gly Val Gly Lys Met Ser Phe Gly Gly Leu Gly Asn Asn Pro Phe Asn
 115 120 125
 Pro Ala Leu Ala Gly Arg Val Phe Leu Leu Leu Ser Phe Pro Val Gln

130	135	140
Met Thr Ser Trp Pro Val Val Gly Gln Leu Thr Ala Tyr Thr Asp Ala		
145	150	155
Thr Thr Ala Ala Thr Pro Leu Ala Leu Met Lys Gln Ala Ile His Gly		160
	165	170
Asp Val Ser Ala Phe Gly Gln Leu Pro Asp Ala Trp Ser Leu Phe Ile		175
	180	185
Gly Asn Asn Gly Gly Cys Leu Gly Glu Val Ser Ala Ala Leu Ile		190
	195	200
Leu Gly Leu Leu Tyr Met Leu Trp Lys Arg Ile Ile Thr Trp His Ile		205
	210	215
Pro Val Ser Ile Leu Val Thr Val Phe Val Phe Ser Gly Ile Met His		220
225	230	235
Leu Ala Asn Pro Glu Ala Tyr Val Ser Pro Val Ile Gln Leu Leu Ser		240
	245	250
Gly Gly Leu Met Leu Gly Ala Ile Phe Met Ala Thr Asp Tyr Val Thr		255
	260	265
Ser Pro Met Ser Lys Lys Gly Met Leu Ile Tyr Gly Val Cys Ile Gly		270
	275	280
Leu Leu Thr Val Val Ile Arg Leu Phe Gly Ala Tyr Pro Glu Gly Met		285
	290	295
Ser Phe Ala Ile Leu Ile Met Asn Ala Phe Thr Pro Leu Ile Asn Thr		300
305	310	315
Tyr Cys Lys Pro Lys Arg Phe Gly Glu Val Ala Lys Lys Lys		320
	325	330

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 <212> PRT
 <213> B.fragilis

<400> 9316

Lys Lys Lys Arg Ser Met Asn Phe Glu Leu Thr Ser Ala Tyr Lys Pro		
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Thr Gly Asp Gln Pro Glu Ala Ile Ala Gln Leu Thr Glu Gly Val Leu		15
	20	25
Glu Gly Val Pro Ala Gln Thr Leu Leu Gly Val Thr Gly Ser Gly Lys		30
	35	40
Thr Phe Thr Ile Ala Asn Val Ile Ala Asn Ile Asn Lys Pro Thr Leu		45
	50	55
Ile Leu Ser His Asn Lys Thr Leu Ala Ala Gln Leu Tyr Ser Glu Phe		60
65	70	75
Lys Gly Phe Phe Pro Asn Asn Ala Val Glu Tyr Tyr Val Ser Tyr Tyr		80
	85	90
Asp Tyr Tyr Gln Pro Glu Ala Tyr Leu Pro Ser Ser Asp Thr Tyr Ile		95
	100	105
Glu Lys Asp Leu Ala Ile Asn Asp Glu Ile Asp Lys Leu Arg Leu Ala		110
	115	120
Ala Thr Ser Ala Leu Leu Ser Gly Arg Lys Asp Val Val Val Val Ser		125
	130	135
Ser Val Ser Cys Ile Tyr Gly Met Gly Asn Pro Ser Asp Phe Tyr Asn		140
145	150	155
Asn Val Ile Glu Ile Glu Arg Gly Arg Thr Ile Asn Arg Asn Val Phe		160
	165	170
Leu Arg Arg Leu Val Asp Ser Leu Tyr Met Arg Asn Asp Ile Glu Leu		175
	180	185
Asn Arg Gly Asn Phe Arg Val Lys Gly Asp Thr Val Asp Ile Tyr Leu		190
	195	200
Ala Tyr Leu Asp Asn Leu Leu Arg Val Thr Phe Trp Gly Asp Glu Ile		205

210	215	220
Asp Gly Ile Glu Glu Val	Asp Pro Val Ser Gly	Val Thr Ile Ala Pro
225	230	235
Phe Glu Ala Tyr Lys Ile Tyr Pro Ala Asn Leu Phe Met Thr Thr Lys		240
	245	250
Glu Ala Thr Leu Arg Ala Ile His Glu Ile Glu Asp Asp Leu Thr Lys		255
	260	265
Gln Val Ala Tyr Phe Glu Ser Ile Glu Lys Glu Tyr Glu Ala Lys Arg		270
	275	280
Leu Tyr Glu Arg Val Thr Tyr Asp Met Glu Met Ile Arg Glu Leu Gly		285
	290	295
His Cys Ser Gly Ile Glu Asn Tyr Ser Arg Tyr Phe Asp Gly Arg Ala		300
305	310	315
Ala Gly Thr Arg Pro Tyr Cys Leu Leu Asp Phe Phe Pro Asp Asp Phe		320
	325	330
Leu Ile Val Ile Asp Glu Ser His Val Ser Val Pro Gln Ile Arg Ala		335
	340	345
Met Tyr Gly Gly Asp Arg Ala Arg Lys Ile Asn Leu Val Glu Tyr Gly		350
	355	360
Phe Arg Leu Pro Ala Ala Met Asp Asn Arg Pro Leu Lys Phe Glu Glu		365
	370	375
Phe Glu Ser Met Ala Lys Gln Val Ile Tyr Val Ser Ala Thr Pro Ala		380
385	390	395
Asp Tyr Glu Leu Val Gln Ser Glu Gly Ile Val Val Glu Gln Val Ile		400
	405	410
Arg Pro Thr Gly Leu Leu Asp Pro Val Ile Glu Val Arg Pro Ser Leu		415
	420	425
Asn Gln Ile Asp Asp Leu Met Glu Glu Ile Gln Ile Arg Ile Glu Lys		430
	435	440
Glu Glu Arg Ile Leu Val Thr Thr Leu Thr Lys Arg Met Ala Glu Glu		445
	450	455
Leu Thr Glu Tyr Leu Leu Asn Asn Asn Val Arg Cys Asn Tyr Ile His		460
465	470	475
Ser Asp Val Asp Thr Leu Glu Arg Val Lys Ile Met Asp Asp Leu Arg		480
	485	490
Gln Gly Val Tyr Asp Val Leu Ile Gly Val Asn Leu Leu Arg Glu Gly		495
	500	505
Leu Asp Leu Pro Glu Val Ser Leu Val Ala Ile Leu Asp Ala Asp Lys		510
	515	520
Glu Gly Phe Leu Arg Ser His Arg Ser Leu Thr Gln Thr Ala Gly Arg		525
	530	535
Ala Ala Arg Asn Val Asn Gly Met Val Ile Met Tyr Ala Asp Lys Ile		540
545	550	555
Thr Asp Ser Met Arg Leu Thr Ile Asp Glu Thr Asn Arg Arg Arg Glu		560
	565	570
Lys Gln Leu Ala Tyr Asn Glu Glu His Gly Ile Thr Pro Gln Gln Ile		575
	580	585
Lys Lys Ala Arg Asn Leu Ser Val Phe Gly Asn Gly Ala Glu Thr Glu		590
	595	600
Asp Thr Gln Lys Gly Thr Arg Ala Tyr Val Glu Pro Ser Ser Pro Asn		605
	610	615
Ile Ala Ala Asp Pro Val Val Gln Tyr Met Ser Lys Ala Gln Leu Glu		620
625	630	635
Lys Ser Met Glu Arg Thr Arg Lys Leu Met Gln Glu Ala Ala Lys Lys		640
	645	650
Leu Glu Phe Ile Glu Ala Ala Gln Tyr Arg Asp Glu Leu Leu Lys Met		655
	660	665
Glu Asp Leu Met Lys Glu Lys Trp Pro Gly		670
	675	680

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

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 <212> PRT
 <213> B.fragilis

<400> 9317

Leu	Thr	Asn	Gly	Gln	Leu	Leu	Ser	Val	Ala	Ala	Glu	Ile	His	Ile	Leu
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Ser	Met	Lys	Ile	Asn	Lys	Thr	Asn	Ala	Ala	Arg	Leu	Leu	Asp	Lys	Ala
		20					25					30			
Lys	Ile	Ala	Tyr	Glu	Leu	Ile	Pro	Tyr	Glu	Val	Asp	Glu	Ser	Asp	Leu
	35					40					45				
Ser	Ala	Val	His	Val	Ala	Ala	Ser	Leu	Gly	Glu	Asn	Ile	Asn	Gln	Val
	50				55						60				
Phe	Lys	Thr	Leu	Val	Leu	His	Gly	Asp	Lys	Thr	Gly	Tyr	Phe	Val	Cys
65				70						75				80	
Val	Ile	Pro	Gly	Asp	Gln	Glu	Val	Asn	Leu	Lys	Leu	Ala	Ala	Lys	Val
			85					90						95	
Ser	Gly	Asn	Lys	Ser	Cys	Asp	Met	Ile	Pro	Met	Lys	Glu	Leu	Leu	Ser
		100					105						110		
Val	Thr	Gly	Tyr	Ile	Arg	Gly	Ala	Cys	Ser	Pro	Ile	Gly	Met	Lys	Lys
	115					120						125			
His	Phe	Pro	Thr	Tyr	Ile	His	Glu	Thr	Cys	Leu	Gly	Phe	Pro	Tyr	Ile
	130				135						140				
Tyr	Val	Ser	Ala	Gly	Gln	Arg	Gly	Leu	Gln	Ile	Lys	Ile	Asp	Pro	Lys
145					150					155					160
Glu	Leu	Ile	Asn	Glu	Val	Arg	Ala	Glu	Val	Cys	Val	Leu	Tyr	Thr	Val
			165					170						175	

<210> 9318
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 <212> PRT
 <213> B.fragilis

<400> 9318

Asn	Thr	Lys	Gly	Phe	Glu	Lys	Asn	Trp	Val	Asn	Gly	Ser	Ala	Ala	Asn
1			5					10					15		
Val	Leu	Leu	Ala	Val	Asn	Ala	Val	Asn	Gly	Thr	Lys	Gly	Gly	Leu	Gly
		20						25				30			
Ser	Ser	Tyr	Leu	Ser	Ala	Ile	Val	Asn	Asp	Tyr	Gly	Glu	Glu	Leu	Arg
	35					40					45				
Thr	Glu	Ser	Gly	Thr	Thr	Ser	Phe	Ser	Ala	Asp	Gly	Asn	Leu	Pro	Arg
	50				55						60				
Ile	Asp	Ile	Leu	Thr	Gln	Asn	Leu	Phe	Asn	Ala	Arg	Leu	Asp	Tyr	Lys
65				70						75				80	
Leu	Phe	Met	Val	Pro	Ala	Leu	Met	Val	Met	Leu	Leu	Thr	Met	Leu	Cys
			85					90					95		
Gly	Phe	Leu	Pro	Ala	Leu	Asn	Ile	Val	Gly	Glu	Lys	Glu	Ala	Gly	Thr
		100					105						110		
Ile	Glu	Gln	Ile	Asn	Val	Thr	Pro	Val	Gly	Lys	Phe	Thr	Phe	Ile	Leu
	115					120						125			
Ala	Lys	Leu	Ile	Pro	Tyr	Trp	Leu	Ile	Gly	Phe	Val	Val	Leu	Thr	Leu
	130					135					140				
Cys	Phe	Val	Leu	Ala	Trp	Thr	Leu	Tyr	Gly	Ile	Phe	Pro	Val	Gly	His
145				150						155					160
Phe	Gly	Val	Ile	Tyr	Cys	Phe	Phe	Ile	Ile	Phe	Val	Leu	Ala	Val	Ser
			165					170						175	
Gly	Leu	Gly	Leu	Val	Ile	Ser	Asn	His	Ser	Ala	Thr	Met	Gln	Gln	Ala

Met	Phe	Val	Met	Trp	Phe	Cys	Met	Leu	Ile	Leu	Ile	Leu	Met	Ser	Gly
		195					200					205			
Leu	Phe	Thr	Pro	Ile	Arg	Ser	Met	Pro	Glu	Trp	Ala	Gln	Trp	Ile	Thr
		210				215					220				
Met	Leu	Asn	Pro	Leu	Lys	Tyr	Phe	Met	Gln	Val	Met	Arg	Met	Val	Tyr
225					230					235					240
Leu	Lys	Gly	Ser	Gly	Phe	Ile	Asp	Leu	Leu	Pro	Gln	Leu	Gly	Ala	Leu
				245					250					255	
Leu	Ala	Phe	Ala	Leu	Leu	Phe	Asn	Val	Trp	Ala	Val	Lys	Ser	Tyr	Arg
			260					265					270		
Lys	Ser	Gly													
		275													

<210> 9319

<211> 62

<212> PRT

<213> B.fragilis

<400> 9319

Lys	Pro	Leu	Gly	Thr	Glu	Thr	Thr	Glu	Arg	Cys	Thr	Val	Ala	Thr	Asp
1			5					10					15		
Phe	Leu	Arg	Met	Ala	Gly	Ser	Met	Ala	Glu	Thr	Lys	Arg	Asn	Gly	Thr
		20					25					30			
Glu	Ile	Lys	Ala	Val	Leu	Ser	Thr	Asn	Lys	Gly	Ser	Val	Pro	Thr	Gly
		35				40					45				
Gln	Ser	Leu	Tyr	Leu	Leu	Thr	Thr	Glu	Ala	Leu	Phe	Gly	Arg		
	50					55					60				

<210> 9320

<211> 657

<212> PRT

<213> B.fragilis

<400> 9320

Gly	Phe	Ile	Ile	Pro	Met	Asn	Lys	Ile	Ala	Leu	Ala	Leu	Ile	Leu	Leu
1			5					10					15		
Ile	Leu	Pro	Phe	Ser	Leu	Ala	Tyr	Thr	Ser	Pro	Arg	Lys	Lys	Val	Gly
		20					25				30				
Ile	Val	Leu	Ser	Gly	Gly	Gly	Ala	Lys	Gly	Val	Ala	His	Ile	Gly	Val
		35				40					45				
Ile	Lys	Ala	Leu	Glu	Glu	Leu	Asn	Ile	Pro	Ile	Asp	Tyr	Ile	Ala	Gly
	50					55				60					
Thr	Ser	Ile	Gly	Ala	Ile	Ile	Gly	Gly	Leu	Tyr	Ser	Ile	Gly	Tyr	Thr
65					70				75					80	
Ser	Glu	Gln	Leu	Glu	Thr	Ile	Val	Lys	Gln	Thr	Asp	Trp	Ile	Asn	Leu
			85					90					95		
Leu	Thr	Asp	Lys	Val	Ser	Arg	Glu	Lys	Ile	Pro	Phe	Pro	Phe	Lys	Ser
		100					105						110		
Asn	Asp	Ser	Lys	Tyr	Leu	Val	Ser	Phe	Pro	Phe	Asn	Asn	Ser	Glu	Lys
		115					120					125			
Asn	Gly	Gly	Ile	Ile	Lys	Gly	Lys	Asn	Ile	Ser	Gln	Leu	Leu	His	Gln
	130					135					140				
Leu	Thr	Glu	Gly	Tyr	Gln	Asn	Val	Thr	Asn	Phe	Asp	Ser	Leu	Pro	Ile
145					150					155				160	
Pro	Phe	Ala	Cys	Ile	Ala	Thr	Asp	Met	Ala	Arg	Asn	Gln	Lys	Glu	Val
			165					170					175		
Ile	Arg	Phe	Gly	Lys	Leu	Ser	Glu	Ala	Met	Arg	Ala	Ser	Met	Ala	Val
			180					185					190		

Phe

Threat	1 st step	2 nd step	3 rd step	4 th step	5 th step	6 th step	7 th step	8 th step	9 th step	10 th step	11 th step	12 th step	13 th step	14 th step	15 th step	16 th step	17 th step	18 th step	19 th step	20 th step	21 th step	22 th step	23 th step	24 th step	25 th step	26 th step	27 th step	28 th step	29 th step	30 th step	31 th step	32 th step	33 th step	34 th step	35 th step	36 th step	37 th step	38 th step	39 th step	40 th step	41 th step	42 th step	43 th step	44 th step	45 th step	46 th step	47 th step	48 th step	49 th step	50 th step	51 th step	52 th step	53 th step	54 th step	55 th step	56 th step	57 th step	58 th step	59 th step	60 th step	61 th step	62 th step	63 th step	64 th step	65 th step	66 th step	67 th step	68 th step	69 th step	70 th step	71 th step	72 th step	73 th step	74 th step	75 th step	76 th step	77 th step	78 th step	79 th step	80 th step	81 th step	82 th step	83 th step	84 th step	85 th step	86 th step	87 th step	88 th step	89 th step	90 th step	91 th step	92 th step	93 th step	94 th step	95 th step	96 th step	97 th step	98 th step	99 th step	100 th step
Threat	1 st step	2 nd step	3 rd step	4 th step	5 th step	6 th step	7 th step	8 th step	9 th step	10 th step	11 th step	12 th step	13 th step	14 th step	15 th step	16 th step	17 th step	18 th step	19 th step	20 th step	21 th step	22 th step	23 th step	24 th step	25 th step	26 th step	27 th step	28 th step	29 th step	30 th step	31 th step	32 th step	33 th step	34 th step	35 th step	36 th step	37 th step	38 th step	39 th step	40 th step	41 th step	42 th step	43 th step	44 th step	45 th step	46 th step	47 th step	48 th step	49 th step	50 th step	51 th step	52 th step	53 th step	54 th step	55 th step	56 th step	57 th step	58 th step	59 th step	60 th step	61 th step	62 th step	63 th step	64 th step	65 th step	66 th step	67 th step	68 th step	69 th step	70 th step	71 th step	72 th step	73 th step	74 th step	75 th step	76 th step	77 th step	78 th step	79 th step	80 th step	81 th step	82 th step	83 th step	84 th step	85 th step	86 th step	87 th step	88 th step	89 th step	90 th step	91 th step	92 th step	93 th step	94 th step	95 th step	96 th step	97 th step	98 th step	99 th step	100 th step

Lys 1	Gln	Ile	Ile	Lys 5	Thr	Val	Ile	Ala	Val 10	Gly	Glu	Thr	Lys	Tyr 15	Ile
Phe	Val	Thr	Gly 20	Gly	Val	Ala	Ser	Ser 25	Leu	Gly	Lys	Gly	Ile 30	Ile	Ser
Ser	Ser	Ile 35	Gly	Lys	Leu	Leu	Gln 40	Ala	Arg	Gly	Tyr 45	Lys	Val	Thr	Ile
Gln	Lys 50	Phe	Asp	Pro	Tyr	Ile 55	Asn	Ile	Asp	Pro	Gly 60	Thr	Leu	Asn	Pro
Tyr 65	Glu	His	Gly	Glu	Cys 70	Tyr	Val	Thr	Val	Asp 75	Gly	His	Glu	Ala	Asp 80
Leu	Asp	Leu	Gly	His 85	Tyr	Glu	Arg	Phe	Leu 90	Gly	Ile	Gln	Thr	Thr	Lys
Ala	Asn	Asn	Ile 100	Thr	Thr	Gly	Arg	Ile 105	Tyr	Lys	Ser	Val	Ile	Asp	Lys
Glu	Arg	Arg 115	Gly	Asp	Tyr	Leu	Gly 120	Lys	Thr	Ile	Gln 125	Val	Ile	Pro	His
Ile	Thr 130	Asp	Glu	Ile	Lys	Arg 135	Asn	Val	Lys	Leu 140	Leu	Gly	Asn	Lys	Tyr
Lys 145	Phe	Asp	Phe	Val 150	Ile	Thr	Glu	Ile	Gly 155	Gly	Thr	Val	Gly	Asp	Ile 160
Glu	Ser	Leu	Pro 165	Tyr	Leu	Glu	Ser	Ile 170	Arg	Gln	Leu	Lys	Trp	Glu	Leu
Gly	Gln	Asn 180	Ala	Leu	Cys	Val	His 185	Leu	Thr	Tyr	Val 190	Pro	Phe	Leu	Ser
Ala	Ala 195	Gln	Glu	Leu	Lys	Thr 200	Lys	Pro	Thr	Gln 205	His	Ser	Val	Lys	Glu
Leu	Gln 210	Ser	Leu	Gly	Val	Gln 215	Pro	Asp	Ile	Leu 220	Val	Leu	Arg	Thr	Glu
His 225	Asp	Leu	Asn 230	Thr	Asn	Leu	Arg	Lys 235	Lys	Val	Ala 240	Leu	Phe	Cys	Asn 245
Val	Ala	Glu	Asn 245	Ala	Val	Val	Gln	Ser 250	Ile	Asp	Ala 255	Ser	Thr	Ile	Tyr
Glu	Val	Pro 260	Leu	Leu	Met	Gln	Glu 265	Gln	Gly	Leu	Asp 270	Glu	Thr	Ile	Leu
Gln	Lys 275	Met	Gly	Leu	Pro	Val 280	Gly	Glu	Arg	Pro 285	Pro	Leu	Gly	Pro	Trp
Lys	Asp 290	Phe	Leu	Asn	Arg 295	Arg	Ala	Asn 300	Ala	Thr	Glu 305	Thr	Val	Thr	Ile
Ala 305	Met	Val	Gly	Lys 310	Tyr	Val	Glu	Leu 315	Gln	Asp	Ala 320	Tyr	Lys	Ser	Ile 325
Leu	Glu	Ser	Leu 325	Ser	Gln	Ala	Ala 330	Thr	Tyr	Asn 335	Asp	Arg	Lys	Val	Lys
Ile	Glu	Tyr 340	Val	Ser	Ser	Glu	His 345	Leu	Thr	Pro 350	Asp	Asn	Val	Asp	Glu
Gln	Leu 355	Gly	His	Val	Asn	Gly 360	Val	Val	Ile	Cys 365	Pro	Gly	Phe	Gly	Ser
Arg	Gly 370	Ile	Glu	Gly	Lys 375	Phe	Val	Ala 380	Ala	Lys	Tyr 385	Thr	Arg	Glu	His
Asn 385	Ile	Pro	Thr 390	Phe	Gly	Ile	Cys	Leu 395	Gly	Met	Gln 400	Cys	Met	Ala	Ile
Glu	Phe	Ala	Arg	Asn	Val	Leu	Gly	Tyr	Ala	Asp	Ala	Asn	Ser	Ile	Glu

				405					410					415	
Met	Asp	Glu	Lys	Thr	Lys	His	Asn	Val	Ile	Asp	Ile	Met	Glu	Glu	Gln
			420						425				430		
Lys	Ala	Ile	Thr	Asn	Met	Gly	Gly	Thr	Met	Arg	Leu	Gly	Ala	Tyr	Glu
		435					440					445			
Cys	Val	Leu	Lys	Lys	Asp	Ser	Lys	Val	Tyr	Glu	Ala	Tyr	Lys	Glu	Glu
	450				455					460					
His	Ile	Gln	Glu	Arg	His	Arg	His	Arg	Tyr	Glu	Phe	Asn	Asn	Asp	Tyr
465				470					475					480	
Arg	Lys	Gln	Phe	Glu	Ala	Gly	Met	Lys	Cys	Val	Gly	Ile	Asn	Pro	
			485					490					495		
Glu	Ser	Asp	Leu	Val	Glu	Ile	Val	Glu	Ile	Pro	Thr	Leu	Lys	Trp	Tyr
		500					505					510			
Ile	Gly	Thr	Gln	Phe	His	Pro	Glu	Tyr	Ser	Ser	Thr	Val	Leu	His	Pro
	515					520					525				
His	Pro	Leu	Phe	Val	Ser	Phe	Ile	Lys	Ala	Ala	Ile	Asp	Lys		
	530					535					540				

<210> 9322

<211> 293

<212> PRT

<213> B.fragilis

<400> 9322

Leu	Lys	Ile	Met	Asn	Leu	Ile	Leu	Ile	Ala	Val	Ile	Ser	Leu	Gly	Ala
1				5					10				15		
Ile	Ala	Leu	Val	Leu	Ala	Ala	Val	Leu	Tyr	Val	Ala	Ser	Lys	Lys	Phe
		20					25					30			
Ala	Val	Tyr	Glu	Asp	Pro	Arg	Ile	Ala	Gln	Val	Ser	Glu	Val	Leu	Pro
	35					40					45				
Gln	Ala	Asn	Cys	Gly	Gly	Cys	Gly	Tyr	Pro	Gly	Cys	Ser	Gly	Phe	Ala
	50					55					60				
Asp	Ala	Cys	Val	Lys	Ala	Gly	Ser	Leu	Glu	Gly	Lys	Phe	Cys	Pro	Val
65				70					75				80		
Gly	Gly	Gln	Pro	Val	Met	Ser	Gln	Val	Ala	Ser	Ile	Leu	Gly	Leu	Asp
			85					90					95		
Ala	Gly	Thr	Ala	Glu	Pro	Met	Val	Ala	Val	Val	Arg	Cys	Asn	Gly	Thr
	100						105					110			
Cys	Thr	Asn	Arg	Pro	Arg	Thr	Asn	Met	Tyr	Asp	Gly	Ala	Lys	Ser	Cys
	115						120				125				
Ala	Ile	Ala	Ala	Ser	Leu	Tyr	Gly	Gly	Glu	Thr	Gly	Cys	Ser	Tyr	Gly
	130					135					140				
Cys	Leu	Gly	Cys	Gly	Asp	Cys	Val	Ala	Ala	Cys	Gln	Phe	Asp	Ala	Ile
145				150					155					160	
His	Met	Asn	Pro	Glu	Thr	Gly	Leu	Pro	Glu	Val	Asp	Glu	Glu	Lys	Cys
			165						170					175	
Thr	Ala	Cys	Gly	Ala	Cys	Val	Lys	Ala	Cys	Pro	Lys	Ala	Ile	Ile	Glu
	180							185					190		
Leu	Arg	Ala	Lys	Gly	Lys	Lys	Ser	Arg	Arg	Val	Tyr	Val	Ser	Cys	Val
	195						200					205			
Asn	Lys	Asp	Lys	Gly	Ala	Val	Ala	Arg	Lys	Ala	Cys	Thr	Val	Ser	Cys
	210					215					220				
Ile	Gly	Cys	Gly	Lys	Cys	Val	Lys	Thr	Cys	Pro	Phe	Glu	Ala	Ile	Thr
225				230						235				240	
Leu	Glu	Asn	Asn	Leu	Ala	Tyr	Ile	Asp	Tyr	Asn	Lys	Cys	Lys	Ser	Cys
			245					250						255	
Arg	Lys	Cys	Val	Glu	Val	Cys	Pro	Gln	His	Thr	Ile	Ile	Glu	Leu	Asn
	260							265					270		
Phe	Pro	Pro	Arg	Lys	Pro	Lys	Glu	Glu	Met	Pro	Val	Ala	Glu	Ala	Ala

275
Lys Thr Ala Glu Ala
290

280

285

<210> 9323
<211> 196
<212> PRT
<213> B.fragilis

<400> 9323

Ser	Arg	Ile	Phe	Ile	Pro	Met	Asn	Ile	Ile	Lys	Thr	Ser	Ile	Glu	Gly	1	5	10	15
Leu	Val	Ile	Leu	Glu	Pro	Arg	Leu	Phe	Gln	Asp	Asp	Arg	Gly	Tyr	Phe	20	25	30	
Phe	Glu	Ser	Phe	Asn	Gln	Gly	Glu	Phe	Glu	Ser	Asn	Val	Cys	Gln	Thr	35	40	45	
Thr	Phe	Val	Gln	Asp	Asn	Glu	Ser	Lys	Ser	Ser	Tyr	Gly	Val	Ile	Arg	50	55	60	
Gly	Leu	His	Phe	Gln	Lys	Pro	Pro	Phe	Ala	Gln	Ser	Lys	Leu	Val	Arg	65	70	75	80
Val	Ile	Lys	Gly	Ala	Val	Leu	Asp	Val	Ala	Val	Asp	Ile	Arg	Lys	Gly	85	90	95	
Ser	Pro	Thr	Phe	Gly	Lys	His	Val	Ser	Val	Glu	Leu	Thr	Glu	Asp	Asn	100	105	110	
His	Arg	Gln	Phe	Phe	Ile	Pro	Arg	Gly	Phe	Ala	His	Gly	Phe	Ser	Val	115	120	125	
Leu	Ser	Glu	Glu	Val	Ile	Phe	Gln	Tyr	Lys	Cys	Asp	Asn	Phe	Tyr	His	130	135	140	
Pro	Glu	Ala	Glu	Gly	Ala	Ile	Ala	Trp	Asn	Asp	Pro	Asp	Leu	Asn	Ile	145	150	155	160
Asp	Trp	Lys	Ile	Pro	Gln	Asp	Arg	Val	Ile	Leu	Ser	Gly	Lys	Asp	Tyr	165	170	175	
Thr	His	Pro	Leu	Leu	His	Asn	Ile	Glu	Leu	Gln	Phe	Asp	Ile	Asn	Asn	180	185	190	
Thr	Leu	Tyr	Glu													195			

<210> 9324
<211> 81
<212> PRT
<213> B.fragilis

<400> 9324

Leu	Ala	Tyr	Met	Thr	Asn	Ile	Glu	Asp	Phe	Val	Ile	Gln	Lys	Val	Lys	1	5	10	15
Ala	Met	Arg	Met	Glu	Arg	Lys	Trp	Ser	Gln	Val	Glu	Leu	Ala	Asp	Tyr	20	25	30	
Met	Asn	Leu	Ser	Pro	Ser	Phe	Ile	Ala	Asp	Ile	Glu	Asn	Pro	Lys	Arg	35	40	45	
Arg	Ala	Lys	Tyr	Asn	Leu	Asn	His	Leu	Asn	Glu	Leu	Ala	Lys	Val	Phe	50	55	60	
Ser	Cys	Ser	Pro	Lys	Asp	Phe	Leu	Pro	Asp	Thr	Pro	Leu	Lys	Asn	Glu	65	70	75	80
Lys																			

<210> 9325
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<212> PRT

<213> B.fragilis

<400> 9325

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Ile Ser Ile Phe Leu Ser Ile Leu Phe Ile Ile Phe Ala Leu Leu Ile
1      5      10      15
Thr Ser Ile Ser Ile Asn Met Glu Thr Asn Ile Glu Ile Asn Lys Pro
      20      25      30
Ser Pro Lys Phe Gln Asp Val Ser Ile Ala Pro Met His Thr Ala Glu
      35      40      45
His Leu Leu Asn Ala Thr Met Val Lys Thr Phe Gly Cys Pro Arg Ser
      50      55      60
Arg Asn Ala His Ile Glu Lys Lys Lys Ser Lys Cys Asp Tyr Glu Leu
65      70      75      80
Pro Thr Cys Pro Thr Glu Glu Gln Ile His Ala Ile Glu Glu Lys Val
      85      90      95
Asn Glu Ala Ile Asp Arg His Leu Pro Val Thr Cys Glu Phe Met Thr
      100     105     110
His Glu Glu Ala Lys Ser Ile Val Asp Leu Ser Lys Leu Pro Glu Asn
      115     120     125
Ala Ser Glu Ile Leu Arg Ile Val Arg Ile Gly Asp Tyr Asp Ala Cys
      130     135     140
Ala Cys Ile Gly Gln His Val Glu Asn Thr Ser Glu Ile Gly Leu Phe
145     150     155     160
Lys Ile Ile Ser Tyr Asp Tyr Ala Asp Gly Lys Leu Arg Leu Arg Phe
      165     170     175
Lys Leu Ile Lys
      180

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<210> 9326

<211> 298

<212> PRT

<213> B.fragilis

<400> 9326

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Ser Ile Ile Met Lys Gly Ile Val Leu Ala Gly Gly Ser Gly Thr Arg
1      5      10      15
Leu Tyr Pro Ile Thr Lys Gly Val Ser Lys Gln Leu Leu Pro Ile Phe
      20      25      30
Asp Lys Pro Met Ile Tyr Tyr Pro Ile Ser Val Leu Met Leu Ala Gly
      35      40      45
Ile Arg Glu Ile Leu Ile Ile Ser Thr Pro Tyr Asp Leu Pro Gly Phe
      50      55      60
Gln Arg Leu Leu Gly Asp Gly Ser Asp Phe Gly Val Arg Phe Glu Tyr
65      70      75      80
Ala Glu Gln Pro Ser Pro Asp Gly Leu Ala Gln Ala Phe Ile Ile Gly
      85      90      95
Glu Lys Phe Ile Gly Gly Asp Ser Val Cys Leu Val Leu Gly Asp Asn
      100     105     110
Ile Phe Tyr Gly Gln Ser Phe Thr Arg Met Leu Arg Glu Ala Val His
      115     120     125
Thr Ala Glu Ser Glu Asn Lys Ala Thr Val Phe Gly Tyr Trp Val Ser
      130     135     140
Asp Pro Glu Arg Tyr Gly Val Ala Glu Phe Asp Lys Ala Gly Asn Val
145     150     155     160
Leu Ser Ile Glu Glu Lys Pro Thr Val Pro Lys Ser Asn Tyr Ala Val
      165     170     175
Val Gly Leu Tyr Phe Tyr Pro Asn Lys Val Val Glu Val Ala Lys Ser
      180     185     190
Ile Gln Pro Ser Pro Arg Gly Glu Leu Glu Ile Thr Thr Val Asn Gln

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195	200	205
Arg Phe Leu Ser Asp Arg Glu Leu Lys Val Gln Leu Leu Gly Arg Gly		
210	215	220
Phe Ala Trp Leu Asp Thr Gly Thr His Asp Ser Leu Ser Glu Ala Ser		
225	230	235
Thr Phe Ile Glu Val Ile Glu Lys Arg Gln Gly Leu Lys Val Ala Cys		
	245	250
Leu Glu Gly Ile Ala Leu Arg Gln Gly Trp Ile Ser Pro Glu Glu Met		
	260	265
Lys Ala Leu Ala Gly Pro Met Leu Lys Asn Gln Tyr Gly Gln Tyr Leu		
	275	280
Leu Lys Val Ile Asp Glu Leu Ser Ile Lys		285
290	295	

<210> 9327

<211> 364

<212> PRT

<213> B.fragilis

<400> 9327

Phe Cys Tyr Ile Cys Lys His Phe Thr Ser Lys Pro Lys Lys Leu Thr		
1	5	10
Ile Ile His Val Met Lys Glu Arg Ile Leu Val Thr Gly Gly Thr Gly		
	20	25
Tyr Ile Gly Ser His Thr Val Val Glu Leu Gln Asn Ser Gly Tyr Glu		
	35	40
Val Ile Ile Ile Asp Asn Leu Ser Asn Ser Asn Ala Asp Val Val Asp		
	50	55
Asn Ile Glu Lys Val Ser Gly Ile Arg Pro Val Phe Glu Lys Leu Asp		
65	70	75
Cys Leu Asp Phe Asp Gly Leu Asp Ala Val Phe Asn Lys Tyr Lys Gly		
	85	90
Ile Lys Ala Ile Ile His Phe Ala Ala Ser Lys Ala Val Gly Glu Ser		
	100	105
Val Glu Lys Pro Leu Leu Tyr Tyr Arg Asn Asn Leu Val Ser Leu Ile		
	115	120
Asn Leu Leu Glu Leu Met Pro Lys His Gly Ile Glu Gly Ile Val Phe		
130	135	140
Ser Ser Ser Cys Thr Val Tyr Gly Glu Pro Asp Glu Leu Pro Val Thr		
145	150	155
Glu Asn Ala Pro Ile Lys Lys Ala Thr Ser Pro Tyr Gly Asn Thr Lys		
	165	170
Gln Ile Asn Glu Glu Ile Val Arg Asp Thr Val Ala Ser Gly Ala Pro		
	180	185
Ile Asn Ala Ile Leu Leu Arg Tyr Phe Asn Pro Ile Gly Ala His Pro		
	195	200
Thr Ala Leu Leu Gly Glu Leu Pro Asn Gly Val Pro Gln Asn Leu Ile		
210	215	220
Pro Tyr Leu Thr Gln Thr Ala Ile Gly Ile Arg Glu Lys Leu Ser Val		
225	230	235
Phe Gly Asp Asp Tyr Asp Thr Pro Asp Gly Ser Cys Ile Arg Asp Phe		
	245	250
Ile Asn Val Val Asp Leu Ala Lys Ala His Val Ile Ala Ile Ala Arg		
	260	265
Ile Leu Glu Lys Lys Gln Lys Asp Lys Val Glu Thr Phe Asn Ile Gly		
	275	280
Thr Gly Arg Gly Val Ser Val Leu Glu Leu Ile Asn Gly Phe Glu Lys		
290	295	300
Ala Thr Gly Val Lys Leu Asn Tyr Gln Ile Val Gly Arg Arg Ala Gly		

305 310 315 320
 Asp Ile Glu Lys Val Trp Ala Asn Pro Asp Tyr Ala Asn Asn Glu Leu
 325 330 335
 Gly Trp Lys Ala Gln Glu Thr Leu Glu Asp Thr Leu Arg Ser Ala Trp
 340 345 350
 Ala Trp Gln Leu Lys Leu Arg Glu Arg Gly Ile Gln
 355 360

<210> 9328
 <211> 277
 <212> PRT
 <213> B.fragilis

<400> 9328
 Pro Lys Asp Met Ile Thr Phe Pro Asn Ala Lys Ile Asn Leu Gly Leu
 1 5 10 15
 Asn Ile Thr Glu Lys Arg Pro Asp Gly Tyr His Asn Leu Glu Thr Val
 20 25 30
 Phe Tyr Pro Ile Pro Leu Glu Asp Ala Leu Glu Ile Thr Ile Leu Asn
 35 40 45
 Asp Ser Lys Gln Lys Phe Val Leu His Gln Ser Gly Leu Glu Ile Ser
 50 55 60
 Gly Glu Pro Glu Thr Asn Leu Val Val Lys Ala Tyr Leu Leu Leu Glu
 65 70 75 80
 Gln Glu Phe Gln Leu Pro Pro Val Asp Ile Tyr Leu Tyr Lys His Ile
 85 90 95
 Pro Ser Gly Ala Gly Leu Gly Gly Gly Ser Ala Asp Ala Ala Phe Met
 100 105 110
 Leu Lys Leu Leu Asn Glu Lys Phe Asn Leu His Leu Ala Asp Glu Lys
 115 120 125
 Leu Glu Glu Tyr Ala Ala Ile Leu Gly Ala Asp Cys Ala Phe Phe Ile
 130 135 140
 Lys Asn Lys Pro Thr Phe Ala Glu Gly Ile Gly Asn Ile Phe Ser Pro
 145 150 155 160
 Val Asp Leu Ser Leu Lys Gly Tyr Gln Leu Val Leu Val Lys Pro Asp
 165 170 175
 Val Phe Val Ser Thr Arg Asp Ala Phe Ser Gln Ile Gln Pro His Tyr
 180 185 190
 Pro Asp His Ser Leu Lys Glu Ile Ile Arg Arg Pro Val Ser Glu Trp
 195 200 205
 Lys Asn Cys Met Phe Asn Asp Phe Glu Lys Ser Val Phe Pro Gln Tyr
 210 215 220
 Pro Val Ile Glu Glu Ile Lys Lys Glu Leu Tyr Ser Lys Gly Ala Ile
 225 230 235 240
 Tyr Ala Ala Met Ser Gly Ser Gly Ser Ser Val Phe Gly Leu Phe Ser
 245 250 255
 Pro Glu Glu Lys Ile Thr Lys Met Asp Phe Glu Ala Ala Phe Cys Phe
 260 265 270
 Gln Thr Glu Leu Lys
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<210> 9329
 <211> 598
 <212> PRT
 <213> B.fragilis

<400> 9329
 Lys Leu Gln Ile Lys Ile Asn Lys Leu Met Lys Ser Ile Lys Arg Ile
 1 5 10 15

Phe Phe Leu Leu Ser Phe Ile Ser Val Ser Tyr Leu Ser Thr Phe Ala
 20 25 30
 Gln Glu Asn Gln Ser Tyr Phe Leu His Thr Ile Glu Lys Gly Gln Ser
 35 40 45
 Leu Tyr Ser Ile Ser Ser Met Tyr Gly Val Ser Lys Ala Asp Ile Ile
 50 55 60
 Arg Leu Asn Pro Gly Cys Glu Asp Lys Ile Tyr Ala Gly Gln Ala Ile
 65 70 75 80
 Lys Ile Pro Gln Asn Lys Thr Ala Gln Lys Gly Glu Thr Phe His Thr
 85 90 95
 Ile Gln Pro Gly Glu Thr Leu Tyr Arg Leu Thr Thr Thr Tyr Lys Val
 100 105 110
 Ser Ala Lys Ala Ile Cys Asp Ala Asn Pro Gly Leu Ser Ala Glu Asn
 115 120 125
 Phe Arg Ile Gly Gln Val Ile Arg Ile Pro Ser Ala Ala Glu Ala Ile
 130 135 140
 Asp Ser Thr Val Glu Ala Val Val Ala Ala Pro Ser Glu Pro Ala Met
 145 150 155 160
 Gln Pro Ala Val Lys Pro Arg Cys Lys Asp Met His Lys Val Lys Arg
 165 170 175
 Arg Glu Thr Ile Phe Ser Val Ser Arg Glu Tyr Gly Ile Ser Glu Gln
 180 185 190
 Glu Leu Ile Ala Ala Asn Pro Glu Leu Lys Asn Gly Met Lys Lys Gly
 195 200 205
 Gln Phe Leu Cys Ile Pro Tyr Pro Ser Glu Lys Pro Thr Val Thr Val
 210 215 220
 Pro Lys Thr Asp Ala Asn Ile Ile Pro Pro Ser Asp Ser Glu Leu Phe
 225 230 235 240
 Arg Glu Asn Lys Glu Val Pro Lys Ser Ile Ser Thr Ile Lys Ala Ala
 245 250 255
 Leu Leu Leu Pro Phe Asp Asp Lys Arg Met Val Glu Tyr Tyr Glu Gly
 260 265 270
 Phe Leu Met Ala Val Asp Ser Leu Lys Arg Thr Gly Thr Ser Ile Asp
 275 280 285
 Leu Tyr Val Tyr Asp Cys Asn Lys Glu Ser Ser Ser Leu Asn Ser Ile
 290 295 300
 Leu Ala Lys Ser Glu Met Lys Asn Met Asn Val Ile Phe Gly Pro Ala
 305 310 315 320
 Gln Gln Gln His Ile Lys Pro Leu Ala Ala Phe Ala Lys Lys Asn Asp
 325 330 335
 Ile Arg Leu Val Ile Pro Phe Ser Ser Lys Glu Gly Glu Val Phe Asn
 340 345 350
 Asn Pro Phe Ile Tyr Gln Ile Asn Thr Pro Gln Ser Tyr Leu Tyr Ser
 355 360 365
 Glu Val Tyr Glu His Phe Thr Arg Gln Phe Pro Asn Ala Asn Val Ile
 370 375 380
 Leu Leu Glu Ser Ala Val Val Asp Lys Asp Lys Val Glu Phe Ile Lys
 385 390 395 400
 Gly Leu Lys Gln Glu Leu Gly Ser Lys Gly Ile Pro Val Lys Thr Leu
 405 410 415
 Lys Glu Asn Ala Pro Val Glu Ala Leu Lys Ala Ala Leu His Asn Asp
 420 425 430
 Lys Glu Asn Phe Phe Ile Pro Thr Ser Gly Asn Asp Leu Thr Leu Leu
 435 440 445
 Arg Ile Ile Pro Gln Leu Thr Leu Leu Val Arg Asp Asn Pro Glu Ala
 450 455 460
 Arg Ile His Leu Phe Gly Tyr Pro Glu Trp Gln Thr Tyr Thr Lys Asp
 465 470 475 480
 His Leu Glu Ser Phe Phe Glu Leu Asp Thr Tyr Phe Tyr Ser Ser Phe

485 490 495
 Tyr Thr Asn Asn Leu Leu Pro Ala Ala Ile Asn Phe Thr Gln Ala Tyr
 500 505 510
 Arg Lys Trp Tyr Ser Lys Glu Met Glu Glu Arg Tyr Pro Lys Tyr Gly
 515 520 525
 Met Leu Gly Phe Asp Thr Gly Tyr Phe Phe Leu Lys Gly Leu Ser Lys
 530 535 540
 Tyr Gly Ser Glu Leu Glu Lys Asn Leu Pro Gln Met Asp Leu Thr Pro
 545 550 555 560
 Ile Gln Thr Gly Phe Lys Phe Gln Arg Val Asn Asn Trp Gly Gly Phe
 565 570 575
 Val Asn Lys Lys Val Phe Phe Val His Phe Thr Lys Asn Phe Glu Leu
 580 585 590
 Ile Lys Leu Asp Phe Glu
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<210> 9330

<211> 452

<212> PRT

<213> B.fragilis

<400> 9330

Thr Asp Lys Ile Gln Asn Cys Met Leu Lys Thr Phe Ser Ile Gly Gly
 1 5 10 15
 Val His Pro His Glu Asn Lys Leu Ser Ala His Gln Pro Ile Val Thr
 20 25 30
 Ala Glu Val Pro Ala Lys Ala Val Ile Leu Leu Gly Gln His Ile Gly
 35 40 45
 Ala Pro Ala Lys Pro Ile Val Ala Lys Gly Asp Val Val Lys Val Gly
 50 55 60
 Thr Lys Ile Ala Glu Ala Asn Gly Phe Val Ser Ala Ala Ile His Ser
 65 70 75 80
 Ser Val Ser Gly Lys Val Ala Lys Ile Asp Ser Ile Val Asp Ala Ser
 85 90 95
 Gly Tyr Ala Lys Pro Ala Ile Phe Ile Asp Val Asp Gly Asp Glu Trp
 100 105 110
 Glu Glu Ser Ile Asp Arg Ser Pro Glu Leu Val Lys Glu Cys Glu Leu
 115 120 125
 Thr Ser Glu Glu Ile Val Lys Lys Ile Ala Asp Ala Gly Ile Val Gly
 130 135 140
 Leu Gly Gly Ala Cys Phe Pro Thr Gln Val Lys Leu Cys Pro Pro Pro
 145 150 155 160
 Ser Phe Lys Ala Glu Cys Val Ile Ile Asn Ala Val Glu Cys Glu Pro
 165 170 175
 Tyr Leu Thr Ala Asp His Gln Leu Met Leu Glu His Ala Glu Glu Val
 180 185 190
 Met Val Gly Val Ala Ile Leu Met Lys Ala Val Lys Val Asn Lys Ala
 195 200 205
 Phe Ile Gly Ile Glu Asn Asn Lys Pro Asp Ala Ile Gln Leu Met Thr
 210 215 220
 Lys Val Ala Ser Ser Tyr Ala Gly Ile Glu Val Val Pro Leu Lys Val
 225 230 235 240
 Lys Tyr Pro Gln Gly Glu Lys Gln Leu Ile Asp Ala Ile Thr Lys
 245 250 255
 Arg Gln Val Ala Ser Gly Ala Leu Pro Ile Ser Thr Gly Ala Val Val
 260 265 270
 Gln Asn Val Gly Thr Ala Phe Ala Val Tyr Gln Ala Val Gln Lys Asn
 275 280 285
 Lys Pro Leu Phe Glu Arg Val Ile Thr Val Thr Gly Lys Ser Val Ala

290		295		300
Gln Pro Ser Asn Phe Leu Ala Arg Ile Gly Thr Pro Met Gln Gln Leu				
305		310		315
Ile Asp Ala Cys Gly Gly Leu Pro Glu Asp Thr Gly Lys Ile Ile Gly				320
	325		330	335
Gly Gly Pro Met Met Gly Lys Ala Leu Val Asn Thr Asp Val Pro Thr				
	340		345	350
Ala Lys Gly Ser Ser Gly Ile Leu Ile Met Asn Arg Lys Glu Ala Lys				
	355	360		365
Arg Gly Glu Val Gln Asn Cys Ile Arg Cys Ala Lys Cys Val Ser Ala				
	370	375		380
Cys Pro Met Gly Leu Glu Pro Tyr Leu Leu Ser Ala Leu Ala Glu Asn				
385		390		395
Thr Glu Phe Glu Arg Met Glu Ser Glu Arg Ile Met Asp Cys Ile Glu				400
	405		410	415
Cys Gly Ser Cys Gln Phe Thr Cys Pro Ala Asn Arg Pro Leu Leu Asp				
	420	425		430
Tyr Cys Arg Leu Gly Lys Gly Lys Val Gly Ala Met Ile Arg Ala Arg				
	435	440		445
Gln Ala Lys Lys				
450				

<210> 9331
 <211> 423
 <212> PRT
 <213> B.fragilis

<400> 9331

Asn Asn Leu Ile Ile Lys Tyr Asn Thr Met Lys Asn Tyr Leu Ile Thr				
1	5		10	15
Tyr Ser Cys Ala Met Phe Leu Leu Ala Ser Cys Gly Ser Pro Ser Gln				
	20		25	30
Gln Pro Lys Ala Pro Gly Gln Ile Asp Ile Ala Gly Lys Ile Glu Ser				
	35		40	45
Leu Thr Glu Leu Lys Ala Ser Asp Phe Ile Lys Glu Ile Asn Tyr Val				
	50	55		60
Ala Leu Glu Thr Thr Asp Ser Cys Leu Val Asn Glu Asn Pro Asn Ile				
65		70	75	80
Gln Val Phe Lys Asn Asn Ile Ile Val Asn Thr Asn Lys Gln Cys Leu				
	85		90	95
Val Phe Asp Lys Asp Ser Gly Lys Phe Leu Arg Ser Ile Gly His Ile				
	100		105	110
Gly Asn Asp Pro Gly Gly Tyr Ser Glu Ala Thr Phe Trp Ile Asp Asp				
	115		120	125
Ile Thr Gly Glu Leu Tyr Phe Ile Gly Trp Asn Gly Thr Leu Met Arg				
	130		135	140
Tyr Asp Leu Gln Gly Asn Tyr Leu Gly Asp Val Lys Val Ala Ser Asn				
145		150	155	160
Leu Gly Val Arg Asn Pro Ala Cys Phe Val Phe Thr Asp Ser Leu Ile				
	165		170	175
Val Ser His Gln Leu Ser Leu Leu Pro Ile Gln Gly Asn Glu Lys Lys				
	180		185	190
Ser Pro Phe Leu Leu Leu Asp Lys Gln Gly Asn Val Ile Asp Ser Ile				
	195	200		205
Pro Ser Leu Leu Pro Val Ile Pro Val Thr Thr Asn Val Val Arg Leu				
	210	215		220
Asn Ile Leu Lys Ser Glu Lys Ala Arg Glu Leu Tyr Gly Asn Ile Gly				
225		230	235	240
Val His Gly Met Met Thr Ala Tyr Phe Asn Asn Asp Asp Ala Ile Glu				

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$\Gamma^{(n)}_1$	$\Gamma^{(n)}_2$	$\Gamma^{(n)}_3$	$\Gamma^{(n)}_4$	$\Gamma^{(n)}_5$	$\Gamma^{(n)}_6$	$\Gamma^{(n)}_7$	$\Gamma^{(n)}_8$	$\Gamma^{(n)}_9$	$\Gamma^{(n)}_{10}$	$\Gamma^{(n)}_{11}$	$\Gamma^{(n)}_{12}$	$\Gamma^{(n)}_{13}$	$\Gamma^{(n)}_{14}$	$\Gamma^{(n)}_{15}$	$\Gamma^{(n)}_{16}$	$\Gamma^{(n)}_{17}$	$\Gamma^{(n)}_{18}$	$\Gamma^{(n)}_{19}$	$\Gamma^{(n)}_{20}$	$\Gamma^{(n)}_{21}$	$\Gamma^{(n)}_{22}$	$\Gamma^{(n)}_{23}$	$\Gamma^{(n)}_{24}$	$\Gamma^{(n)}_{25}$	$\Gamma^{(n)}_{26}$	$\Gamma^{(n)}_{27}$	$\Gamma^{(n)}_{28}$	$\Gamma^{(n)}_{29}$	$\Gamma^{(n)}_{30}$	$\Gamma^{(n)}_{31}$	$\Gamma^{(n)}_{32}$	$\Gamma^{(n)}_{33}$	$\Gamma^{(n)}_{34}$	$\Gamma^{(n)}_{35}$	$\Gamma^{(n)}_{36}$	$\Gamma^{(n)}_{37}$	$\Gamma^{(n)}_{38}$	$\Gamma^{(n)}_{39}$	$\Gamma^{(n)}_{40}$	$\Gamma^{(n)}_{41}$	$\Gamma^{(n)}_{42}$	$\Gamma^{(n)}_{43}$	$\Gamma^{(n)}_{44}$	$\Gamma^{(n)}_{45}$	$\Gamma^{(n)}_{46}$	$\Gamma^{(n)}_{47}$	$\Gamma^{(n)}_{48}$	$\Gamma^{(n)}_{49}$	$\Gamma^{(n)}_{50}$	$\Gamma^{(n)}_{51}$	$\Gamma^{(n)}_{52}$	$\Gamma^{(n)}_{53}$	$\Gamma^{(n)}_{54}$	$\Gamma^{(n)}_{55}$	$\Gamma^{(n)}_{56}$	$\Gamma^{(n)}_{57}$	$\Gamma^{(n)}_{58}$	$\Gamma^{(n)}_{59}$	$\Gamma^{(n)}_{60}$	$\Gamma^{(n)}_{61}$	$\Gamma^{(n)}_{62}$	$\Gamma^{(n)}_{63}$	$\Gamma^{(n)}_{64}$	$\Gamma^{(n)}_{65}$	$\Gamma^{(n)}_{66}$	$\Gamma^{(n)}_{67}$	$\Gamma^{(n)}_{68}$	$\Gamma^{(n)}_{69}$	$\Gamma^{(n)}_{70}$	$\Gamma^{(n)}_{71}$	$\Gamma^{(n)}_{72}$	$\Gamma^{(n)}_{73}$	$\Gamma^{(n)}_{74}$	$\Gamma^{(n)}_{75}$	$\Gamma^{(n)}_{76}$	$\Gamma^{(n)}_{77}$	$\Gamma^{(n)}_{78}$	$\Gamma^{(n)}_{79}$	$\Gamma^{(n)}_{80}$	$\Gamma^{(n)}_{81}$	$\Gamma^{(n)}_{82}$	$\Gamma^{(n)}_{83}$	$\Gamma^{(n)}_{84}$	$\Gamma^{(n)}_{85}$	$\Gamma^{(n)}_{86}$	$\Gamma^{(n)}_{87}$	$\Gamma^{(n)}_{88}$	$\Gamma^{(n)}_{89}$	$\Gamma^{(n)}_{90}$	$\Gamma^{(n)}_{91}$	$\Gamma^{(n)}_{92}$	$\Gamma^{(n)}_{93}$	$\Gamma^{(n)}_{94}$	$\Gamma^{(n)}_{95}$	$\Gamma^{(n)}_{96}$	$\Gamma^{(n)}_{97}$	$\Gamma^{(n)}_{98}$	$\Gamma^{(n)}_{99}$	$\Gamma^{(n)}_{100}$
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<400> 9332

Lys 1	Arg	Tyr	Val	Asp 5	Leu	Trp	Cys	Leu	His 10	Arg	Phe	Ala	Asp	Gly 15	Cys
Tyr	Pro	Ser	Val	Trp	Cys	Ile	Ser	Gly	Arg	Tyr	Val	Val	Cys	Tyr	Ser
			20					25					30		
Asp	Tyr	Glu	Cys	Ile	His	Ser	Ala	Asn	Gln	Tyr	Val	Leu	Gln	Thr	Lys
		35					40					45			
Thr	Leu	Trp	Gly	Gly	Ser	Glu	Glu	Glu	Met	Lys	Lys	Leu	Glu	Ser	Ser
	50				55					60					
Leu	Lys	Asn	Met	Leu	Leu	Val	Leu	Thr	Gly	Val	Thr	Ala	Ile	Ser	Val
65				70					75					80	
Ala	Leu	Leu	Ala	Tyr	Val	Asn	Glu	Leu	Thr	Lys	Gly	Pro	Ile	Ala	Glu
			85					90					95		
Ala	Asn	Ala	Lys	Thr	Leu	Asn	Glu	Ala	Leu	Lys	Glu	Val	Leu	Pro	Glu
			100					105					110		
Phe	Thr	Asn	Asn	Pro	Val	Ala	Glu	Cys	Asp	Thr	Val	Phe	Ser	Glu	Lys
		115					120					125			
Asp	Gly	Lys	Lys	Ile	Val	Asp	Phe	Ile	Ile	Tyr	Pro	Ala	Lys	Asn	Gly
	130					135				140					
Asp	Gln	Trp	Val	Gly	Thr	Ala	Val	Glu	Ala	Lys	Ser	Met	Gly	Phe	Gly
145				150					155					160	
Gly	Glu	Leu	Lys	Val	Leu	Val	Gly	Phe	Asp	Ala	Glu	Gly	Lys	Ile	Tyr
			165						170					175	
Asn	Tyr	Ser	Leu	Leu	Ser	His	Ala	Glu	Thr	Pro	Gly	Leu	Gly	Ser	Lys
			180					185					190		
Ala	Ala	Asp	Trp	Phe	Lys	Glu	Gly	Asn	Lys	Gly	Ser	Ile	Lys	Gly	Met
		195					200					205			
Asn	Pro	Gly	Glu	Gln	Pro	Leu	Thr	Val	Ser	Lys	Asp	Gly	Gly	Gln	Val
	210					215					220				
Asp	Ala	Ile	Thr	Ala	Ser	Thr	Ile	Thr	Ser	Arg	Ala	Phe	Leu	Asn	Ala

225		230		235		240
Val Asn Ala Ala Tyr	Gly Ala Tyr Lys	Gly Asn Gly Gly Ala Asn Gly				
	245	250		255		
Thr Thr Gly Ala Ser	Gln Lys Val Val	Gln Lys Ser Glu Thr Gly Ile				
	260	265		270		
Val Asp Ser Val Val	Ile Lys					
	275					

<210> 9333

<211> 548

<212> PRT

<213> B.fragilis

<400> 9333

Phe Ser Leu Leu Ile Lys Leu Tyr Arg	Ile Met Ser His Ile Asp Arg
1	5 10 15
Met Arg Gln Leu Gly Asn Ile Ala Leu Pro Asn Glu Asp Ser Pro Leu	
	20 25 30
His Asp Ile Ile Val Lys Lys Leu Lys Lys His Asp Ser Pro Asp Ile	
	35 40 45
Gln Lys Arg Val Gly Glu Ala Phe Asn Lys Ala Phe Ala Ile Val Asp	
	50 55 60
Ala Gln Arg Lys Asn Gly Ala Asn Leu Pro Ile Asp Ile Glu Leu Arg	
65	70 75 80
Tyr Tyr Leu Glu Glu Phe Asn Ser Arg Ala Trp Lys Tyr Gly Leu Arg	
	85 90 95
Thr Met Pro Ser Ser Phe Asn Val Met Glu Ala Phe Phe Thr Tyr Asn	
	100 105 110
Pro Gln Leu Asn Ser Phe Phe Leu Leu Asp Glu Glu Asp Phe Leu Ile	
	115 120 125
Asp Phe Ile Asp Phe Ile Asp Tyr Ala Thr Ser Lys Asp Cys Pro Asn	
	130 135 140
Lys Ile Glu Glu Ser Leu Lys Leu Phe Asp Glu Asp Arg Ile Tyr Asn	
145	150 155 160
Phe Thr Val Thr Asn Asn Pro Pro Asp Ile Asp Phe Ser Leu Leu Asp	
	165 170 175
Asn Lys Ile Lys Tyr Ala Ile Gly Gly Val Ser Met Ile Lys Arg Gly	
	180 185 190
Asp Glu Val Ser Met Ile Leu Leu Ala Gly Glu Lys Asn Ser Asp Leu	
	195 200 205
Ser Leu Pro Pro Leu Lys Glu Thr Lys Arg Ile Pro Gly Lys Ser Arg	
	210 215 220
Leu Glu Tyr Ser Pro Asp Arg Val Gln Glu Lys Val Arg Phe Trp Asp	
225	230 235 240
Asp Glu Gly Tyr Trp Lys Thr Ile Ile Leu Leu Arg Phe Asp Val Leu	
	245 250 255
Thr Met Glu Leu Asp Ala Lys Phe Ile Asn Lys Asp Met Gly Asn Ser	
	260 265 270
Phe Ser Val Leu Thr Asp Tyr Ile Glu Ser Phe Leu Ser Glu Lys Gly	
	275 280 285
Glu Phe Leu Phe Pro Glu Ala Glu Asn Tyr Leu Asn Glu Gln Lys Val	
	290 295 300
Lys Ile Gln Asn Tyr Tyr Pro Leu Phe Glu Ile Ala Arg Thr Cys Leu	
305	310 315 320
His Leu Leu Ser Tyr Val Glu Lys Tyr Thr Asp Ser Leu Ser Ser Glu	
	325 330 335
Glu His Ile Thr Val Leu Gly His Glu Pro Ile Lys Pro Arg Phe Phe	
	340 345 350
Lys Lys Asp Lys Met Val Pro Pro Lys Tyr Glu Leu Arg Lys Arg Asp	

355	360	365
Val Trp Asn Leu Lys Arg Gln Arg Asp Asn Tyr Ser Ser Ser Ile Ile		
370	375	380
Thr Phe Asn Asp Asp Phe Lys Leu Glu Thr Ser Gly Tyr Trp Lys Ser		
385	390	395
Leu Lys Pro Asn Glu Ile Gly Gln Asn Lys Asn Gly Asp Glu Ile His		400
	405	410
Gly Lys Thr Trp Val Ser Ile Thr Lys Thr Trp His Glu Thr Glu Asn		415
	420	425
Lys Pro Ile Lys Ile Thr Asn Asn Ile Lys Thr Leu Val Asn Ser Val		430
	435	440
Asn Ser Gly Phe Ile Tyr Ile Met Arg Asn Ala Ser His Glu Lys Asn		445
	450	455
Ile Phe Lys Val Gly Leu Thr Arg Arg Asp Cys Glu Thr Arg Ala Lys		460
465	470	475
Glu Leu Ser Ser Ala Thr Gly Val Pro Asp Lys Tyr Leu Ile Val Glu		480
	485	490
Glu Phe Ala Thr Ala Asp Cys Val Leu Ala Glu Lys Leu Ile His Glu		495
	500	505
Lys Leu Asp Asp Tyr Arg Leu Asn Asn Lys Arg Glu Phe Phe Lys Ala		510
	515	520
Asn Tyr Ser Phe Ile Arg Ala Thr Ile Asn Glu Ile Val Asn Glu Ile		525
	530	535
Asn Ser Asn Thr		540
545		

<210> 9334

<211> 275

<212> PRT

<213> B.fragilis

<400> 9334

Leu Cys Ala Leu Phe Lys Tyr Arg Met Lys Lys Asn Ile Ile Ile Thr		
1	5	10
Leu Leu Ala Ala Thr Val Leu Ser Ser Cys Gly Glu Tyr Asn Lys Leu		15
	20	25
Leu Lys Ser Thr Asp Tyr Glu Tyr Lys Tyr Glu Ala Ala Lys Asn Tyr		30
	35	40
Phe Ala Lys Gly Gln Tyr Asn Arg Ser Ala Thr Leu Leu Asn Glu Leu		45
	50	55
Ile Thr Ile Leu Lys Gly Gly Asp Lys Ala Glu Glu Ser Leu Tyr Met		60
65	70	75
Leu Ala Met Ser Tyr Tyr Asn Gln Lys Asp Tyr Ser Thr Ala Ala Gln		80
	85	90
Ser Phe Ile Thr Tyr Phe Asn Thr Tyr Pro Arg Gly Gln Phe Ser Glu		95
	100	105
Leu Ala Arg Phe His Ala Gly Lys Ala Leu Phe Leu Asp Thr Pro Glu		110
	115	120
Pro Arg Leu Asp Gln Ser Ser Thr Tyr Gln Ala Ile Gln Gln Leu Gln		125
	130	135
Met Phe Leu Glu Tyr Tyr Pro Gln Ser Ser Arg Lys Gln Glu Ala Gln		140
145	150	155
Asn Met Ile Phe Ala Leu Gln Asp Lys Leu Val Leu Lys Glu Leu Tyr		160
	165	170
Ser Ala Arg Leu Tyr Tyr Asn Leu Gly Asn Tyr Met Gly Asn Asn Tyr		175
	180	185
Leu Ser Cys Val Ile Thr Ala Gln Asn Ala Leu Lys Asp Tyr Pro Tyr		190
	195	200
Thr Asp Tyr Arg Glu Asp Leu Ser Ile Leu Ile Leu Arg Ala Lys Tyr		205

210	215	220
Glu Met Ala Val Asn Ser Val Glu Asp Lys Lys Met Asp Arg Tyr Arg		
225	230	235
Glu Thr Val Asp Glu Tyr Tyr Ala Phe Lys Asn Glu Phe Pro Glu Ser		
	245	250
Lys Tyr Leu Lys Glu Ala Glu Arg Ile Phe Lys Asp Ser Gln Lys Val		
	260	265
Ile Lys Asp		270
275		

<210> 9335
 <211> 71
 <212> PRT
 <213> B.fragilis

<400> 9335
Ser Met Phe Phe Lys Ile Lys Lys Asn Gly Arg Ile Glu Phe Ser Tyr
1 5 10 15
Glu Trp Arg Ile Ser Ile Asp Gly Trp Leu Ile Tyr Lys Gln Tyr Ser
20 25 30
Ser Tyr Ser Leu Thr Ile His His Leu Val Thr Asp Phe Thr Val Tyr
35 40 45
Thr Ser Arg Leu Pro Pro Thr Ser Gln Leu Ser Phe Pro Ser Thr His
50 55 60
Gly Tyr Ser Phe Pro Tyr His
65 70

<210> 9336
 <211> 177
 <212> PRT
 <213> B.fragilis

<400> 9336
Lys Leu Pro Ser His Ser Arg Thr Val Ile Ser Asn Ile Leu Ser Tyr
1 5 10 15
Lys Met Asn Thr Leu Met Thr Gln Ile His Glu Leu Gln His Val Ala
20 25 30
His Glu Leu Leu Tyr Leu Gly Ala Asp Gly Ser Pro Ile Tyr Thr Asp
35 40 45
Ser Phe Arg Gln Leu Asn Thr Glu Val Leu Gln Lys Ser Asp Ala Leu
50 55 60
Phe Ala Leu Lys Gly Glu Asn Pro Glu Glu Glu Ala Arg Leu Cys Leu
65 70 75 80
Ala Leu Leu Met Gly Tyr Asn Ala Thr Ile Tyr Asp Tyr Gly Asp Lys
85 90 95
Glu Ser Lys Lys Gln Val Ile Leu Asp Arg Ser Leu Leu Val Leu Glu
100 105 110
Ser Leu Pro Ser Ser Leu Leu Lys Cys Gln Leu Leu Thr Tyr Cys Tyr
115 120 125
Gly Glu Val Phe Glu Glu Glu Leu Ala Lys Glu Ala His Ala Ile Ile
130 135 140
Asp Tyr Trp Asp Asn Lys Thr Leu Ser Ile Asp Glu Gln Glu Thr Val
145 150 155 160
Asp Met Leu Lys Met Ile Glu Glu Asn Gln Tyr Pro Asn Ser Tyr Ile
165 170 175
Asp

<210> 9337

<211> 161
 <212> PRT
 <213> B.fragilis

<400> 9337

Leu Phe Tyr Ser Gly Leu Asn Thr Thr Leu Lys Thr Met Ile Gln Arg
 1 5 10 15
 Ile Gln Thr Ile Tyr Leu Leu Leu Val Thr Ala Leu Leu Ile Thr Ser
 20 25 30
 Met Cys Leu Pro Val Gly Ser Phe Ile Gly Ala Asp Ala Ala Met Tyr
 35 40 45
 Val Phe Lys Pro Leu Gly Val Glu Met Asn Gly Thr Leu Tyr Ser Thr
 50 55 60
 Trp Gly Val Phe Gly Ile Leu Leu Leu Ser Ala Ile Ile Ala Phe Ala
 65 70 75 80
 Thr Ile Phe Leu Phe Lys Asn Arg Met Leu Gln Ile Arg Met Thr Ile
 85 90 95
 Phe Asn Ser Ile Leu Leu Ile Gly Tyr Tyr Leu Thr Phe Leu Ala Phe
 100 105 110
 Met Phe Val Leu Lys Lys Asp Leu Ser Ala Thr Phe Gln Ile Ser Trp
 115 120 125
 Ala Leu Cys Leu Pro Leu Ile Ser Ile Ile Leu Asn Trp Leu Ala Val
 130 135 140
 Arg Ala Ile Gly Arg Asp Glu Val Met Val Lys Ala Ala Asp Arg Leu
 145 150 155 160
 Arg

<210> 9338
 <211> 106
 <212> PRT
 <213> B.fragilis

<400> 9338

Ser Gln Tyr Ser Gly Phe Asp Gly Ser Ser Val Asp Asn Asn Lys Leu
 1 5 10 15
 Gln Glu Ile Gln Lys Gln Val Met Ile Lys Tyr Leu Ile Glu Lys Glu
 20 25 30
 Phe Lys Gln Leu Leu Arg Asn Ser Phe Leu Pro Arg Leu Ile Phe Ile
 35 40 45
 Phe Pro Cys Met Ile Met Leu Leu Met Pro Trp Ala Ala Asn Leu Asp
 50 55 60
 Ile Lys Asn Ile Arg Met Asn Ile Ile Asp Asn Asp His Ser Val Ser
 65 70 75 80
 Ser Arg Arg Leu Val Asp Lys Ile Thr Asp Ser Thr Tyr Phe Gln Thr
 85 90 95
 Asn Ala Trp Arg Ile Leu Thr Lys Lys Val
 100 105

<210> 9339
 <211> 60
 <212> PRT
 <213> B.fragilis

<400> 9339

Val Ile Lys Ser Leu Phe Met Leu Gly Ile Ser Ile Leu Val Val Leu
 1 5 10 15
 Tyr Val Tyr Asp Ala Gly Ile Ser Pro Asn Ala Ala Val Val Leu Asn
 20 25 30

Glu	Tyr	Pro	Met	Thr	Arg	Ile	Val	Pro	Glu	Arg	Val	Ser	Asn	Phe	Pro
		35					40					45			
Phe	Phe	Ser	Thr	Gly	Glu	Glu	Ala	Pro	Phe	Glu	Val				
	50					55					60				

<210> 9340

<211> 1168

<212> PRT

<213> B.fragilis

<400> 9340

Lys	Arg	Lys	Ser	Ile	Ile	Leu	Lys	Lys	Arg	Glu	Ser	Glu	Ser	Thr	Pro
1				5					10					15	
Ile	Leu	Ser	Asp	Ser	Lys	Gln	Ser	Lys	Ile	Asp	Leu	Asn	Gln	Phe	Ile
		20					25					30			
Asn	Leu	Thr	Arg	Tyr	Lys	Asp	Met	Arg	Lys	Ile	Ser	Leu	Pro	Arg	His
	35					40					45				
Leu	Cys	Pro	Lys	Asn	Phe	Val	Ser	Lys	Gln	Ile	Leu	Leu	Ala	Met	Lys
	50					55					60				
Ile	Thr	Leu	Phe	Leu	Leu	Phe	Phe	Val	Ala	Phe	Gln	Ala	Tyr	Ser	Glu
65				70						75					80
Asn	Gly	Tyr	Ser	Gln	Ser	Thr	Lys	Ile	Ser	Ile	Pro	Arg	Ser	Ser	Leu
			85					90						95	
Lys	Val	Ser	Glu	Leu	Leu	Ser	Lys	Ile	Glu	Ser	Gln	Thr	Lys	Tyr	Leu
		100					105						110		
Phe	Val	Tyr	Asn	Lys	Lys	Asn	Val	Asp	Thr	Arg	Arg	Trp	Val	Asn	Val
		115				120						125			
Gln	Ala	Asp	Asn	Lys	Ala	Val	Ser	Glu	Val	Leu	Asp	Gln	Ala	Phe	Lys
	130					135					140				
Gly	Thr	Asn	Ile	Lys	Tyr	Val	Met	Glu	Gly	Asn	Asn	Ile	Val	Leu	Thr
145				150						155					160
Arg	Asn	Asn	Asp	Asn	Ala	Ile	Thr	Ala	Gln	Gln	Asp	Arg	Val	Thr	Val
			165						170					175	
Lys	Gly	Val	Val	Thr	Asp	Gln	Asn	Gly	Asp	Pro	Ile	Ile	Gly	Ala	Asn
		180					185						190		
Val	Leu	Glu	Lys	Gly	Thr	Thr	Asn	Gly	Cys	Ile	Thr	Asp	Met	Glu	Gly
	195						200					205			
Asn	Phe	Thr	Leu	Asn	Val	Pro	Ser	Asn	Ala	Thr	Leu	Ala	Ile	Thr	Tyr
	210				215						220				
Ile	Gly	Tyr	Gln	Pro	Gln	Asn	Ile	Gln	Val	Asn	Gly	Arg	Gln	Ser	Phe
225				230						235					240
Asn	Val	Lys	Leu	Gln	Glu	Glu	Ala	Met	Ala	Leu	Glu	Gln	Val	Val	Val
			245						250					255	
Thr	Ala	Met	Gly	Ile	Lys	Lys	Lys	Glu	Ala	Ser	Leu	Thr	Tyr	Ser	Thr
		260						265					270		
Gln	Gln	Val	Gly	Gly	Asp	Glu	Leu	Thr	Arg	Ala	Lys	Asp	Pro	Asn	Met
		275					280					285			
Ile	Asn	Ala	Leu	Ala	Gly	Lys	Thr	Ala	Gly	Val	Gln	Ile	Thr	Lys	Ser
	290					295					300				
Ser	Ser	Gly	Leu	Gly	Gly	Ser	Ala	Lys	Val	Ser	Ile	Arg	Gly	Ser	Arg
305				310						315					320
Ser	Ile	Ser	Gly	Asn	Asn	Gln	Pro	Leu	Tyr	Val	Ile	Asp	Gly	Val	Pro
			325						330					335	
Met	Leu	Asn	Ser	Ser	Asn	Glu	Gln	Ala	Ser	Thr	Ala	Ile	Gly	Gly	Thr
		340					345						350		
Ala	Asp	Ala	Gly	Asn	Arg	Asp	Gly	Gly	Asp	Gly	Ile	Ser	Asn	Leu	Asn
	355						360					365			
Pro	Asp	Asp	Ile	Glu	Ser	Met	Ser	Ile	Leu	Lys	Gly	Ala	Ser	Ala	Ala
	370					375					380				

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Ala	Leu	Tyr	Gly	Ser	Gln	Ala	Ala	Asn	Gly	Val	Ile	Leu	Ile	Thr	Thr
385					390					395					400
Lys	Lys	Gly	Lys	Ala	Gly	Ile	Gln	Lys	Ile	Thr	Phe	Ser	Ser	Asn	Leu
				405					410						415
Thr	Val	Asp	His	Ala	Ile	Cys	Leu	Pro	Glu	Phe	Gln	Asn	Asn	Tyr	Ala
			420					425						430	
Met	Asp	Pro	Glu	Ala	Lys	Asn	Ser	Trp	Gly	Lys	Asn	Gln	Thr	Leu	Lys
		435					440					445			
Asp	Tyr	Asn	Asn	Ala	Asp	Asn	Phe	Phe	Gln	Asn	Gly	Val	Thr	Ala	Ile
	450					455					460				
Asn	Ser	Val	Ser	Phe	Met	Asn	Gly	Ser	Glu	Lys	Met	Gln	Thr	Tyr	Phe
465					470					475					480
Ser	Tyr	Ala	Asn	Thr	Thr	Ala	Lys	Gly	Ile	Val	Glu	Lys	Asn	Lys	Met
				485					490						495
Gln	Lys	His	Asn	Leu	Asn	Phe	Arg	Glu	Thr	Ala	Asn	Phe	Phe	Asn	Asp
			500					505						510	
Tyr	Leu	Lys	Leu	Asp	Ala	Asn	Val	Asn	Leu	Met	Thr	Gln	Thr	Ile	Lys
		515					520					525			
Asn	Arg	Pro	Thr	Ser	Gly	Gly	Tyr	Tyr	Met	Asn	Pro	Leu	Val	Gly	Leu
	530					535					540				
Tyr	Gly	Phe	Pro	Arg	Gly	Glu	Asp	Leu	Ser	Glu	Tyr	Lys	Asn	Asn	Phe
545					550					555					560
Glu	Val	Phe	Asp	Pro	Ala	Arg	Asn	Met	Asn	Val	Gln	Asn	Trp	Tyr	Thr
			565						570						575
Ser	Tyr	Gln	Asp	Met	Glu	Gln	Asn	Pro	Tyr	Trp	Ile	Thr	Asn	Arg	Ile
			580					585						590	
Asn	Ser	Asn	Asp	Lys	Arg	Thr	Arg	Ala	Ile	Ala	Ser	Leu	Thr	Ala	Asn
		595					600					605			
Val	Lys	Ile	Thr	Asp	Trp	Leu	Asn	Ile	Gln	Ala	Arg	Gly	Thr	Ala	Asp
	610					615					620				
Tyr	Thr	His	Asp	Gln	Tyr	Gln	Gln	Arg	Met	Tyr	Ala	Ser	Thr	Ala	Pro
625					630					635					640
Ala	Leu	Ala	Gly	Gln	Asn	Gly	Arg	Tyr	Ile	Asp	Leu	Asn	His	Thr	Glu
			645						650						655
Thr	Leu	Tyr	Tyr	Gly	Asp	Val	Met	Ala	Met	Val	Asn	Lys	Lys	Trp	Asn
			660					665						670	
Asp	Phe	Ser	Leu	Asn	Gly	Ala	Ile	Gly	Gly	Ser	Ile	Asn	Ser	Thr	Asn
		675					680					685			
Val	Asn	Ser	Leu	Arg	Leu	Asp	Ser	Lys	Thr	Ala	Ser	Leu	Tyr	Tyr	Pro
	690					695					700				
Asn	Val	Phe	Thr	Val	Ala	Asn	Ile	Lys	Met	Thr	Gln	Ala	Ala	Tyr	Ile
705					710					715					720
Asp	Glu	Gln	Met	Asn	Gln	Lys	Arg	Val	Leu	Gln	Ser	Leu	Phe	Gly	Thr
			725						730						735
Ala	Gln	Leu	Gly	Trp	Lys	Glu	Ser	Leu	Tyr	Leu	Asp	Val	Thr	Ala	Arg
			740					745						750	
Asn	Asp	Trp	Ser	Ser	Thr	Leu	Ala	Tyr	Thr	Lys	His	Ser	Ser	Phe	Phe
		755					760					765			
Tyr	Pro	Ser	Val	Gly	Leu	Ser	Trp	Val	Leu	Asn	Asn	Thr	Val	Lys	Leu
	770					775						780			
Pro	Glu	Trp	Ile	Ser	Phe	Gly	Lys	Ile	Arg	Gly	Ser	Trp	Ser	Lys	Val
785					790					795					800
Gly	Asn	Asp	Leu	Pro	Leu	Phe	Ile	Ser	Asn	Ser	Ile	Pro	Gly	Ser	Asn
			805						810						815
Asp	Ile	Ile	Gly	Ala	Gly	Gly	Ala	Ile	Val	Thr	Tyr	Ser	Lys	Ala	Pro
			820					825					830		
Phe	Asn	Asp	Leu	Lys	Pro	Glu	Met	Ser	Thr	Ser	Tyr	Glu	Ile	Gly	Thr
		835					840					845			
Glu	Trp	Ile	Phe	Phe	Asn	Tyr	Arg	Leu	Asp	Leu	Asp	Ile	Ser	Tyr	Tyr

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

850	855	860
Arg Thr Asn Thr Lys	Asn Gln Leu Phe Thr	Leu Pro Ser Ser Ala Gly
865	870	875
Ala Asp Tyr Lys Tyr	Tyr Met Val Asn Ala Gly	Asn Ile Gln Asn Glu
	885	890
Gly Val Glu Ile Thr	Leu Gly Ala Thr	Pro Val Met Asn Asp Ala Phe
	900	905
Arg Trp Lys Thr Gln	Phe Asn Phe Ser Thr	Asn Lys Asn Lys Ile Ile
	915	920
Lys Leu His Pro Asp	Leu Lys Thr Phe Val Tyr	Gly Asp Glu Ser Phe
	930	935
Ser Ser Ser Tyr Ser	Met Arg Leu Val Glu Gly	Gly Ser Phe Gly Asp
945	950	955
Ile Tyr Gly Lys Ala	Phe Glu Arg Asp Glu	Asn Gly Lys Val Ala Phe
	965	970
Thr Thr Asp Lys Asp	Gly Asp Lys Ile Pro	Asn Val Ile Gly Gly Gly
	980	985
Asn Thr Glu Lys Val	Gly Asn Cys Asn Pro	Asp Phe Met Leu Gly Trp
	995	1000
Ser Asn Thr Phe Thr	Tyr Lys Gly Phe Ser	Leu Tyr Phe Leu Ile Asp
	1010	1015
Gly Arg Phe Gly Gly	Asp Val Leu Ser Gln	Thr Gln Ala Glu Leu Asp
1025	1030	1035
Gln Arg Gly Val Ser	Leu Asn Ser Gly Lys	Ala Arg Asp Ala Gly Tyr
	1045	1050
Ile Asn Ile Asp Gly	Thr Gln Val Lys Pro	Arg Lys Phe Tyr Thr Ala
	1060	1065
Val Ser Gly Arg Asp	Gly Cys Thr Glu Tyr	Tyr Met Tyr Asp Ala Thr
	1075	1080
Asn Ile Arg Leu Arg	Glu Leu Ser Leu Gly	Tyr Ser Leu Pro Gln Ser
	1090	1095
Trp Leu Ala Lys Ala	Gly Gly Ala Phe Lys	Asp Val Gln Leu Ser Phe
1105	1110	1115
Val Ala Arg Asn Leu	Phe Phe Ile Ser Lys	Lys Ala Pro Phe Asp Pro
	1125	1130
Asp Ala Val Leu Ser	Thr Gly Asn Asp	Asn Gln Gly Ile Asp Val Phe
	1140	1145
Gly Met Pro Thr Thr	Arg Ser Leu Gly Phe	Asn Ile Lys Phe Thr Phe
	1155	1160
		1165

<210> 9341
 <211> 810
 <212> PRT
 <213> B.fragilis

<400> 9341
 Ser Ile Phe Pro Ser Ala Pro Glu Thr Ser Pro Phe Thr Leu Asn Leu
 1 5 10 15
 Gly Ser Glu Leu Gln Glu Leu Lys Ala Arg Ala Thr Arg Ala Thr Asn
 20 25 30
 Val Thr Phe Phe Ile Ile Phe Val Leu Phe Phe Lys Leu Gln Ile Tyr
 35 40 45
 Phe Phe Ser Arg Leu Val Lys Ala Phe Cys Arg Val Leu Arg Ser Lys
 50 55 60
 Ile Glu Lys Asn Gln Ile Pro Ala Asn Phe Leu Ser His Phe His Asp
 65 70 75 80
 Ile Ser Ala Ile Asn Val Tyr Leu Cys Gly Asn Phe Glu Arg Lys Ile
 85 90 95
 Leu Asp Lys Thr Ile Phe Met Ile Asn Pro Ile Val Lys Thr Ile Glu

100	105	110
Leu Gly Asp Gly Arg Thr Ile Thr	Leu Glu Thr Gly Lys	Leu Ala Lys
115	120	125
Gln Ala Asp Gly Ser Val Met	Leu Arg Met Gly Asn Thr	Met Leu Leu
130	135	140
Ala Thr Val Cys Ala Ala Lys Asp	Ala Val Pro Gly Thr	Asp Phe Met
145	150	155
Pro Leu Gln Val Glu Tyr Lys Glu	Lys Phe Ala Ala Phe Gly	Arg Phe
165	170	175
Pro Gly Gly Phe Thr Lys Arg Glu	Gly Arg Ala Ser Asp Tyr	Glu Ile
180	185	190
Leu Thr Cys Arg Leu Val Asp Arg	Ala Leu Arg Pro Leu Phe	Pro Asp
195	200	205
Asn Tyr His Ala Glu Val Tyr Val	Asn Ile Ile Leu Phe Ser	Ala Asp
210	215	220
Gly Val Asp Met Pro Asp Ala Leu	Ala Gly Leu Ala Ala Ser	Ala Ala
225	230	235
Leu Ala Val Ser Asp Ile Pro Phe	Asn Gly Pro Ile Ser Glu	Val Arg
245	250	255
Val Ala Arg Ile Asp Gly Lys Phe	Val Ile Asn Pro Thr Phe	Asp Gln
260	265	270
Leu Glu Gln Ala Asp Met Asp Ile	Met Val Ala Ala Thr Tyr	Glu Asn
275	280	285
Ile Met Met Val Glu Gly Glu Met	Ser Glu Val Ser Glu Ala	Glu Leu
290	295	300
Leu Glu Ala Met Lys Val Ala His	Glu Ala Ile Lys Val His	Cys Lys
305	310	315
Ala Gln Met Glu Leu Thr Glu Met	Val Gly Lys Thr Val Lys	Arg Glu
325	330	335
Tyr Cys His Glu Glu Asn Asp Glu	Glu Leu Arg Lys Ala Val	His Asp
340	345	350
Ala Cys Tyr Asp Lys Ser Tyr Ala	Ile Ala Ala Ser Gly Asn	Arg Asn
355	360	365
Lys His Glu Arg Gln Asp Ala Phe	Asp Ala Ile Arg Asp Glu	Phe Lys
370	375	380
Ala Gln Phe Ser Glu Glu Glu Leu	Glu Glu Lys Gly Ala Leu	Ile Asp
385	390	395
Arg Tyr Tyr His Asp Val Glu Lys	Glu Ala Met Arg Arg Cys	Ile Leu
405	410	415
Asp Glu Gly Lys Arg Leu Asp Gly	Arg Lys Thr Thr Glu Ile	Arg Pro
420	425	430
Ile Trp Cys Glu Val Gly Tyr Leu	Pro Gly Pro His Gly Ser	Ala Ile
435	440	445
Phe Thr Arg Gly Glu Thr Gln Ser	Leu Thr Ser Val Thr Leu	Gly Thr
450	455	460
Lys Leu Asp Glu Lys Ile Ile Asp	Asp Val Leu Ala His Gly	Lys Glu
465	470	475
Arg Phe Leu Leu His Tyr Asn Phe	Pro Pro Phe Ser Thr Gly	Glu Ala
485	490	495
Lys Ala Gln Arg Gly Val Gly Arg	Arg Glu Ile Gly His Gly	Asn Leu
500	505	510
Ala His Arg Ala Leu Lys Arg Met	Ile Pro Glu Asp Tyr Pro	Tyr Val
515	520	525
Val Arg Val Val Ser Asp Ile Leu	Glu Ser Asn Gly Ser Ser	Ser Met
530	535	540
Ala Thr Val Cys Ala Gly Thr Leu	Ala Leu Met Asp Ala Gly	Val Lys
545	550	555
Ile Lys Lys Pro Val Ser Gly Ile	Ala Met Gly Leu Ile Lys	Asn Ala
565	570	575

Gly Glu Glu Lys Tyr Ala Val Leu Ser Asp Ile Leu Gly Asp Glu Asp
 580 585 590
 His Leu Gly Asp Met Asp Phe Lys Val Thr Gly Thr Lys Asp Gly Ile
 595 600 605
 Thr Ala Thr Gln Met Asp Ile Lys Val Asp Gly Leu Ser Tyr Glu Ile
 610 615 620
 Leu Glu Arg Ala Leu Asn Gln Ala Lys Glu Gly Arg Met His Ile Leu
 625 630 635 640
 Gly Lys Ile Glu Glu Thr Ile Ser Glu Pro Arg Thr Glu Leu Lys Asp
 645 650 655
 His Ala Pro Arg Ile Glu Thr Met Thr Ile Pro Lys Glu Phe Ile Gly
 660 665 670
 Ala Val Ile Gly Pro Gly Gly Lys Ile Ile Gln Gly Met Gln Glu Glu
 675 680 685
 Thr Gly Ala Thr Ile Thr Ile Glu Glu Ile Asp Asn Val Gly Arg Ile
 690 695 700
 Glu Ile Ser Gly Thr Asn Lys Lys Ser Ile Asp Asp Ala Ile Arg Leu
 705 710 715 720
 Ile Lys Gly Ile Val Ala Val Pro Glu Val Gly Glu Val Tyr Lys Gly
 725 730 735
 Lys Val Arg Ser Ile Met Pro Tyr Gly Ala Phe Val Glu Phe Leu Pro
 740 745 750
 Gly Lys Asp Gly Leu Leu His Ile Ser Glu Ile Asp Trp Lys Arg Leu
 755 760 765
 Glu Thr Val Glu Glu Ala Gly Ile Lys Glu Gly Asp Glu Ile Glu Val
 770 775 780
 Lys Leu Ile Asp Ile Asp Pro Lys Thr Gly Lys Phe Lys Leu Ser Arg
 785 790 795 800
 Lys Val Leu Leu Pro Arg Pro Glu Lys Lys
 805 810

<210> 9342

<211> 538

<212> PRT

<213> B.fragilis

<400> 9342

Val Met Asn Thr Lys Thr Lys Leu Leu Tyr Val Gly Phe Arg Ala Leu
 1 5 10 15
 Asn Thr Cys Cys Leu Tyr Ala Ala Phe Leu Met Ile Thr Ser Cys Gly
 20 25 30
 Asp Asn Val Val Asn Pro Asp Ser Pro Glu Pro Asp Gly Glu Asp Met
 35 40 45
 Ile Pro Val Thr Val Ser Arg Val Glu Asp Gly Ser Tyr Met Glu Ser
 50 55 60
 His Ile Asp Thr Pro Asp Thr Thr Gly Gly Arg Thr Leu Val Asp Glu
 65 70 75 80
 Trp Val Pro Val Lys Glu Pro Pro Ala Ser Arg Ala Ile Pro Ala Ala
 85 90 95
 Val Pro Tyr Glu Gly Pro Ser Ala Val Arg Met Thr Leu Arg Glu Glu
 100 105 110
 Pro Gln Val Pro Thr Arg Ala Ala Thr Leu Gly Asn Gly Ile Tyr Phe
 115 120 125
 Arg Leu Ile Ala Phe Arg Lys Val Gly Ser Asn Tyr Val Phe Gln Ser
 130 135 140
 Ala Ala Asp Phe Thr Thr Asn Gly Ala Ser Ala Pro Thr Leu Arg Leu
 145 150 155 160
 Gly Asn Leu Leu Thr Arg Ala Gly Thr Val Arg Val Ile Gly Tyr Ser
 165 170 175

Phe Asn Ser Thr Ala Ala Met Gly Thr Ile Pro Ser Ser Tyr Thr Tyr
 180 185 190
 Asn Ser Thr Ser Val Thr Ile Pro Asn Met Asn Ser Asp Phe Met Val
 195 200 205
 Tyr Asp Ser Gly Glu Ile Ala Asn Val Ser Thr Ile Ser His Asn Leu
 210 215 220
 Ser Val Ser Phe Thr Gln Lys Leu Cys Lys Leu Thr Val Lys Leu Ser
 225 230 235 240
 Leu Ser Gln Phe Val Ser Asn Thr Phe Thr Asn Cys Thr Gly Val Tyr
 245 250 255
 Val Ser Gln Gly Gly Asn Thr Ser Ala Trp Thr Ile Gly Pro Ser Thr
 260 265 270
 Asn Asn Val Ser Ala Asn Thr Gly Asn Thr Pro Thr Phe Asn Ile Ala
 275 280 285
 Asn Asn Ser Thr Ala Thr Ile Arg Leu Val Pro Phe Ser Gly Ser Arg
 290 295 300
 Ala Ile Thr Val His Ile Gly Thr Leu Thr Leu Ser Asn Tyr Phe Asn
 305 310 315 320
 Ala Asn Asn Arg Asn Ile Thr Ser Ser Gln Asn Val Gln Leu Leu Pro
 325 330 335
 Gly Arg Ser Tyr Thr Ile Thr Leu Gln Ile Gly Leu Gly Ile Gln Val
 340 345 350
 Ala Ala Ser Asp Ile Asn Leu Thr Gln Asn Gly Cys Thr Ala Ser Asp
 355 360 365
 Lys Asn Asp Leu Ala Lys Leu Arg Trp Ala Thr Gly Asn Leu Lys Ser
 370 375 380
 Thr Gly Ser Ala Asn Tyr Val Trp Ala Ser Ser Thr Asp Arg Gly Tyr
 385 390 395 400
 Tyr Tyr Thr Trp Tyr Ser Thr Tyr Thr Gly Asn Thr Asn Ile Asn Asn
 405 410 415
 Thr Asp Pro Cys Ser Lys Leu Asn Thr Ala Tyr Tyr Gly Thr Gly Trp
 420 425 430
 Arg Thr Pro Ser Lys Asn Glu Leu Thr Lys Leu Ala Arg Cys Thr Asn
 435 440 445
 Lys Ile Leu Thr Asn Ser Gly Met Trp Phe Met Asn Asn Ser Ile Gly
 450 455 460
 Leu Phe Leu Pro Ala Ala Gly Cys Arg Gln Asp Gly Asn Gly Ser Asn
 465 470 475 480
 Thr Ser Pro Thr Thr Asp Ser Gly Thr Asp Gly Tyr Tyr Trp Ser Ser
 485 490 495
 Asp Ile Gly Asn Gly Asn Asn Thr Gly Lys Arg Leu Tyr Phe Gly Lys
 500 505 510
 Arg Tyr Asn Thr Ala Asp Val Ala Asp His Ala Lys Asn Ala Gly Leu
 515 520 525
 Thr Val Arg Cys Val Lys Gly Thr Lys Gln
 530 535

<210> 9343

<211> 253

<212> PRT

<213> B.fragilis

<400> 9343

Ile Met Lys Thr Glu Leu Lys Gly Trp Leu Ala Asp Asn Thr Val Thr
 1 5 10 15
 Thr Asp Asn Lys Glu Asp Lys Ile Leu Val Leu Glu Ser Ala Gly Asn
 20 25 30
 Leu Thr Leu Ser Asp Val Leu Asp Glu Met Lys Lys Glu Asp Thr Gly
 35 40 45

Leu Arg Ala Glu Thr Leu Lys His Ala Val Asp Leu Phe Gln Arg Thr
 50 55 60
 Val Ser Glu Leu Val Leu Asn Gly Tyr Ser Val Asn Thr Gly Leu Phe
 65 70 75 80
 Arg Ala Val Pro Gln Phe Arg Gly Val Ile Asp Gly Gly Val Trp Asn
 85 90 95
 Pro Glu Lys Asn Ser Ile Tyr Val Ser Phe Asn Gln Asp Lys Asp Leu
 100 105 110
 Arg Glu Ala Ile Ala Arg Thr Gly Val Lys Ile Leu Gly Val Lys Gly
 115 120 125
 Asp Ser Ala Tyr Phe Ile Gly Gly Glu Asp Ala Ala Thr Arg Ala Thr
 130 135 140
 Asp Gly Ser Ala Thr Ala Gly Arg Asn Tyr Arg Leu Gln Gly Lys Asn
 145 150 155 160
 Ile Lys Val Ala Gly Thr Asp Pro Ala Val Gly Ile Val Leu Ile Asp
 165 170 175
 Glu Lys Gly Thr Glu Thr Lys Leu Pro Met Asp Met Ile Ala Val Asn
 180 185 190
 Asn Pro Ser Glu Val Leu Val Leu Leu Pro Ala Asp Leu Thr Asp Gly
 195 200 205
 Ile Tyr Lys Leu Arg Leu Thr Thr Gln Tyr Thr Ser Gly Asn Arg Gln
 210 215 220
 Leu Lys Thr Pro His Val Ile Ser Gln Thr Ile Val Ile Gly Asn Thr
 225 230 235 240
 Thr Glu Gly Asp Gly Asp Ile Val Asp Asp Pro Thr Ala
 245 250

<210> 9344
 <211> 86
 <212> PRT
 <213> B.fragilis

<400> 9344
 Cys Asn Lys Asp Lys Met Leu Phe Leu Leu Val Gln Ile Phe Ser His
 1 5 10 15
 Arg Phe Asn Tyr Gln Ser Phe Ile Tyr Ser Leu Cys Ile Leu Tyr Arg
 20 25 30
 Glu Gln Glu Ser Cys Phe Lys Arg Thr Ser Phe Glu Thr Pro Pro
 35 40 45
 Val Tyr Ser Arg Gln Leu Tyr Leu Ile Gly Ile His Lys Leu Thr His
 50 55 60
 Asn Lys Ser Cys Ile Lys Gln Ser Leu Pro Thr Tyr Thr Leu Met Tyr
 65 70 75 80
 Lys Ser Gly Lys Arg Phe
 85

<210> 9345
 <211> 313
 <212> PRT
 <213> B.fragilis

<400> 9345
 Lys His Phe Met Glu Gln Glu Leu Leu Tyr Lys Tyr Phe Lys Gly Thr
 1 5 10 15
 Thr Ser Glu Glu Glu Arg Leu Ile Leu Asp Trp Val Asp Ala Ser
 20 25 30
 Pro Glu Asn Arg Lys Ala Phe Gln Lys Glu Arg Met Leu Tyr Asp Ile
 35 40 45
 Ala Leu Phe Thr Asp Glu Lys Gln Met Asn Arg Lys Asp Arg Lys Ala

50 55 60
 Arg Ile Ile Pro Met Leu Arg Trp Ser Ala Arg Ile Ala Ala Val Val
 65 70 75 80
 Ile Val Ala Ile Ser Phe Gly Phe Leu Phe Lys Asn Tyr Gln Tyr Glu
 85 90 95
 Lys Ser Ala Cys Gln Gln Thr Ile Thr Val Pro Ala Gly Gln Arg Ala
 100 105 110
 Gln Ile Thr Leu Ala Asp Gly Thr Lys Val Trp Leu Asn Ser Lys Ser
 115 120 125
 Thr Leu Thr Tyr Ala Ser Asn Phe Gly Arg Lys Glu Arg Asn Val Glu
 130 135 140
 Leu Asp Gly Glu Ala Tyr Phe Glu Val Ala Lys Asn Lys Lys Ile Pro
 145 150 155 160
 Phe Phe Val Asn Thr Glu Ile Asn Arg Val Lys Val Val Gly Thr His
 165 170 175
 Phe Asn Val Cys Ala Tyr Lys Gly Ser Asn Glu Phe Glu Thr Thr Leu
 180 185 190
 Ile Glu Gly Ile Val Asp Ile Tyr Pro Ile Gly Ser Asp Gln Val Ile
 195 200 205
 Thr Arg Leu Thr Lys Asp Glu Phe Phe Gly Ser Tyr Asn Gly Lys Tyr
 210 215 220
 Lys Lys Thr Thr Leu Pro Ser Tyr Glu Tyr Leu Arg Trp Lys Glu Gly
 225 230 235 240
 Leu Tyr Cys Phe Asp Ala Pro Phe Asn Ser Leu Leu Asn Lys Leu
 245 250 255
 Glu Lys Tyr Tyr Asn Val Asn Ile Ser Val Arg Asn Leu Asn Ile Leu
 260 265 270
 Asn Tyr Arg Cys Thr Gly Lys Phe Lys Glu Gln Asp Gly Ile Glu His
 275 280 285
 Ile Leu Lys Val Ile Gln Lys Asp His Lys Phe Thr Tyr Ser Ile Asn
 290 295 300
 Glu Glu Lys Asp Ser Ile Ile Ile Glu
 305 310

<210> 9346
 <211> 374
 <212> PRT
 <213> B.fragilis

<400> 9346
 Thr Lys Asn Met Asp Lys Leu Asn Ile Asn Ser Thr Pro Ser Ser Val
 1 5 10 15
 Lys Asn Gly Arg Gly Glu Arg Leu Leu Val Ile Asn Pro Gly Ser Thr
 20 25 30
 Ser Thr Lys Ile Ala Val Tyr Glu Asn Glu Thr Pro Leu Leu Val Arg
 35 40 45
 Asn Ile Arg His Thr Val Glu Glu Leu Ser Ala Phe Pro Arg Val Ile
 50 55 60
 Asp Gln Phe Glu Phe Arg Lys Ser Leu Val Leu Arg Glu Leu Glu Val
 65 70 75 80
 Asn Asp Ile Pro Phe Arg Phe Asp Ala Val Ile Gly Arg Gly Gly Leu
 85 90 95
 Val Lys Pro Ile Pro Gly Gly Val Tyr Glu Val Asn Glu Ala Met Lys
 100 105 110
 Arg Asp Thr Leu His Ala Met Arg Thr His Ala Cys Asn Leu Gly Gly
 115 120 125
 Leu Ile Ala Asp Glu Leu Ala Ala Ala Leu Pro Gly Cys Arg Ala Phe
 130 135 140
 Ile Ala Asp Pro Gly Val Val Asp Glu Leu Glu Glu Val Ala Arg Ile

145 150 155 160
 Thr Gly Ser Pro Leu Met Pro Arg Ile Thr Ile Trp His Ala Leu Asn
 165 170 175
 Gln Lys Ala Ile Ala Arg Arg Tyr Ala Ala Glu His Gly Thr Arg Tyr
 180 185 190
 Glu Asp Leu Asp Leu Ile Val Cys His Leu Gly Gly Gly Ile Ser Val
 195 200 205
 Ala Val His Arg His Gly Arg Ala Val Asp Ala Asn Asn Ala Leu Asp
 210 215 220
 Gly Glu Gly Pro Phe Ser Pro Glu Arg Ala Gly Thr Leu Pro Ala Gly
 225 230 235 240
 Gln Leu Ile Asp Leu Cys Phe Ser Gly Lys Phe Thr Lys Asp Glu Leu
 245 250 255
 Lys Lys Arg Ile Ser Gly Arg Ala Gly Leu Thr Ala His Leu Gly Thr
 260 265 270
 Thr Asp Ile Pro Ala Ile Ile Gln Ser Ile Glu Ala Gly Asp Asp His
 275 280 285
 Ala Arg Leu Val Leu Asp Ala Met Ile Tyr Asn Val Ala Lys Ser Ile
 290 295 300
 Gly Ala Ala Ser Thr Val Leu Cys Gly Lys Val Asp Ala Ile Leu Leu
 305 310 315 320
 Thr Gly Gly Ile Ala Tyr Ser Asp Tyr Val Ile Ser Arg Leu Arg Glu
 325 330 335
 Arg Ile Ser Phe Leu Ala Pro Val Phe Val Tyr Pro Gly Glu Asp Glu
 340 345 350
 Met Glu Ala Leu Ala Leu Asn Ala Leu Gly Ala Leu Arg Gly Glu Leu
 355 360 365
 Pro Val Gln Val Tyr Gln
 370

<210> 9347

<211> 189

<212> PRT

<213> B.fragilis

<400> 9347

Asn Leu Phe Met Pro Ser Asn Asn Ser Leu His Thr Met Asp Leu Phe
 1 5 10 15
 Ser Gln Phe Phe Gln Glu Asn Gln Lys Lys Phe Leu Ser Phe Ala Tyr
 20 25 30
 Ser Tyr Thr Arg Asn Lys Ala Ala Ala Glu Asp Ile Leu Met Glu Ala
 35 40 45
 Met Ala Ser Leu Trp Glu Asn Arg Lys Lys Trp Glu Lys Asp Ser Asn
 50 55 60
 Leu His Ala Leu Leu Leu Thr Ile Ile Lys Asn Lys Ser Leu Asn Tyr
 65 70 75 80
 Leu Glu His Glu Gln Val Arg Met Lys Ala Glu Glu Val Ile Asn Thr
 85 90 95
 His Lys Gln Arg Glu Leu Asp Leu Arg Ile Ser Thr Leu Glu Ala Cys
 100 105 110
 Glu Pro Ala Thr Ile Phe Asp Thr Glu Ile Gln Arg Ile Val Tyr Lys
 115 120 125
 Thr Leu Glu Gln Leu Pro Glu Gln Ser Arg His Ile Phe Ile Leu Ser
 130 135 140
 Arg Tyr His Asn Thr Pro Asn Lys Lys Ile Ala Glu Gln Leu Gly Ile
 145 150 155 160
 Ser Ile Lys Ser Val Glu Phe His Ile Thr Lys Ala Leu Lys Leu Leu
 165 170 175
 Arg Leu Glu Leu Lys Asp Tyr Leu Ile Ser Leu Leu Phe

180

185

<210> 9348
 <211> 542
 <212> PRT
 <213> B.fragilis

<400> 9348

Lys	Arg	Phe	Ile	Met	Lys	Asn	Asn	Ile	Lys	Tyr	Ile	Ala	Gly	Ile	Leu
1				5					10					15	
Leu	Gly	Gly	Leu	Ile	Gly	Phe	Ser	Ala	Cys	Thr	Asp	Ser	Phe	Glu	Ser
			20					25					30		
Phe	Asn	Thr	Asn	Glu	Ala	Gly	Phe	Asp	Asn	Asp	Ser	Lys	Lys	Gln	Asp
		35					40					45			
Phe	Asn	Tyr	Tyr	Gly	Ile	Pro	Leu	Gly	Ile	Ile	Gln	Gln	Gly	Ile	Tyr
	50					55					60				
Phe	Asn	Tyr	Asp	Trp	Gly	Ser	Gly	Lys	Asn	Trp	Pro	Phe	Gln	Thr	Met
65				70					75						80
Gln	Asn	Leu	Gly	Ala	Asp	Leu	Phe	Ser	Gly	Tyr	Val	His	Asp	Phe	Asn
			85						90					95	
Pro	Phe	Asn	Glu	Gly	Lys	Asn	Asn	Ser	Thr	Tyr	Tyr	Met	Met	Asp	Gly
		100						105					110		
Trp	Asn	Gly	Ser	Thr	Trp	Asp	Asn	Thr	Tyr	Gly	Tyr	Ile	Met	Pro	Glu
	115					120						125			
Val	Gln	Lys	Ser	Glu	Thr	Ile	Asn	Glu	Lys	Asp	Asn	Ile	Gly	Phe	Phe
	130					135					140				
Gly	Ile	Thr	Lys	Ile	Leu	Lys	Val	Glu	Leu	Met	His	Arg	Leu	Ser	Asp
145					150					155					160
Leu	Tyr	Gly	Pro	Ile	Val	Tyr	Thr	Gln	Phe	Gly	Ser	Lys	Thr	Gly	Ser
			165						170					175	
Thr	Pro	Asp	Thr	Gln	Gln	Glu	Ala	Tyr	Lys	Ala	Phe	Phe	Asn	Asp	Leu
			180					185					190		
Asp	Thr	Gly	Ile	Ala	Lys	Ile	Arg	Glu	Tyr	Gln	Lys	Ala	Asn	Pro	Asp
	195					200						205			
Ile	Glu	Ser	Phe	Ala	Lys	Phe	Asp	Ile	Leu	Met	Pro	Gln	Gly	Lys	Arg
	210					215					220				
Thr	Phe	Ser	Glu	Trp	Ile	Arg	Phe	Ala	Asn	Ser	Leu	Arg	Leu	Arg	Leu
225				230						235					240
Ala	Val	Arg	Ile	Ala	Met	Ala	Asp	Ser	Lys	Leu	Ala	Val	Ala	Glu	Ala
			245						250					255	
Gln	Lys	Ala	Leu	Thr	Asp	Glu	Glu	Gly	Leu	Leu	Glu	Gly	Asn	Asp	Glu
		260						265					270		
Val	Val	Ala	Val	Ser	Thr	Ser	Ser	Gly	Tyr	Thr	Asn	Pro	Phe	Gly	Glu
	275						280					285			
Ile	Asn	Lys	Ala	Trp	Gly	Glu	Val	Phe	Met	Asn	Ala	Asn	Met	Glu	Ser
	290					295					300				
Leu	Leu	Val	Gly	Tyr	Glu	Asp	Pro	Arg	Met	Glu	Lys	Tyr	Phe	Asp	Lys
305				310						315					320
Ala	Thr	Gly	Ser	Asp	Ala	Thr	Ser	Leu	Ile	Asp	Tyr	Lys	Gly	Thr	Tyr
			325						330					335	
Lys	Gly	Ile	Arg	Gln	Gly	Thr	Gly	Phe	Ser	His	Lys	Asn	Tyr	Asn	Gly
		340						345					350		
His	Ser	Lys	Ser	Thr	Ile	Thr	Gln	Thr	Asp	Ala	Val	Leu	Met	Thr	
	355					360					365				
Pro	Ala	Glu	Val	Trp	Phe	Leu	Arg	Ala	Glu	Ala	Ala	Leu	Arg	Gly	Trp
	370					375					380				
Ser	Ser	Glu	Ser	Val	Lys	Asp	Cys	Tyr	Glu	Lys	Gly	Val	Lys	Ala	Ser
385				390						395					400
Phe	Ala	Gln	Trp	Gly	Ala	Ala	Gly	Ala	Glu	Ala	Tyr	Leu	Glu	Ser	Asp

[illegible]

<400> 9349															
Phe 1	Phe	Ser	Ile	Leu 5	Glu	Arg	Arg	Thr	Arg	Gln	Asn	Ala	Leu	Thr	Asn
Leu	Glu	Lys	Lys 20	Tyr	Ile	Cys	Ser	Leu 25	Lys	Asn	Asn	Thr	Asn	Ile	Met
Lys	Lys	Val	Thr 35	Leu	Val	Ala	Leu 40	Val	Ala	Leu	Ala	Leu	Ser	Ser	Cys
Asn	Ser	Asp	Pro	Lys	Phe	Asn	Val	Lys	Gly	Asp	Val	Ser	Gly	Ala	Asp
Gly 65	Lys	Met	Leu	Tyr	Leu	Glu	Ala	Ser	Gly	Leu	Glu	Gly	Ile	Val	Pro
Leu	Asp	Ser	Ile	Lys 85	Leu	Lys	Gly	Asp	Gly	Ser	Phe	Ser	Phe	Lys	Gln
Leu	Arg	Pro	Glu	Ser	Pro	Glu	Phe	Tyr	Arg	Leu	Arg	Val	Glu	Asp	Lys
Val	Ile	Asn	Phe	Ser	Val	Asp	Ser	Thr	Glu	Thr	Val	Ser	Ile	Gln	Ala
Pro	Tyr	Thr	Asp	Phe	Ser	Thr	Ala	Tyr	Thr	Val	Glu	Gly	Ser	Glu	Asn
Ser 145	Ala	Lys	Ile	Lys	Glu	Leu	Thr	Leu	Lys	Gln	Val	Arg	Leu	Gln	Lys
Asp	Val	Asp	Ala	Leu	Val	Lys	Ala	Ala	Gln	Ala	His	Gln	Leu	Gly	Asn
Asp	Val	Phe	Glu	Asp	Ser	Leu	Ala	Val	Leu	Leu	Lys	Asn	Tyr	Lys	Asp
Asp	Val	Lys	Ile	Asn	Tyr	Ile	Phe	Ala	Ala	Pro	Asn	Thr	Ala	Ser	Ala
Tyr	Phe	Ala	Leu	Phe	Gln	Lys	Leu	Asn	Asn	Tyr	Met	Ile	Phe	Asp	Pro
Leu 225	Asn	Asn	Lys	Asp	Asp	Ile	Lys	Cys	Phe	Gly	Ala	Val	Ala	Thr	Ser
Leu	Asn	Asn	Thr	Tyr	Pro	Gln	Val	Phe	Thr						

<210> 9350
<211> 107

<212> PRT
 <213> B.fragilis

<400> 9350

Val	Glu	Ala	Ile	Ser	Ile	Leu	Ser	Ala	Leu	Leu	Ala	Ile	Arg	Phe	Pro
1			5						10					15	
Thr	Val	Ser	Leu	Lys	Cys	Thr	Val	Ile	Val	Arg	Glu	Leu	Ala	Lys	
		20					25					30			
Gly	Thr	Met	Arg	Ile	Val	Val	Val	Trp	Leu	Val	Phe	Gly	Leu	Asn	Glu
		35					40					45			
Ala	Val	Leu	Leu	Val	Leu	Ala	Ala	Thr	Ala	Glu	Leu	Pro	Ile	Thr	His
		50				55					60				
Glu	Val	Glu	Leu	Pro	Pro	Cys	Phe	Thr	Tyr	Thr	Pro	Val	His	Pro	Leu
65				70					75					80	
Met	Val	Leu	Leu	Val	Lys	Pro	Val	Thr	Leu	Met	Leu	Ile	Val	Ser	Leu
			85						90					95	
His	Ser	Phe	Cys	Leu	Asn	Val	Thr	Gly	Arg	Leu					
			100					105							

<210> 9351

<211> 317

<212> PRT

<213> B.fragilis

<400> 9351

Lys	Ser	Asn	Val	Met	Glu	Pro	Ile	Arg	Asn	Phe	Asp	Gln	Leu	Thr	Ala
1			5						10					15	
His	Leu	Lys	Thr	Leu	Asn	Arg	Arg	Lys	Arg	Ile	Ala	Val	Val	Cys	Ala
		20					25					30			
Asn	Asp	Pro	Asn	Thr	Glu	Tyr	Ala	Ile	Ala	Arg	Ala	Leu	Asp	Glu	Glu
		35					40					45			
Ile	Ala	Glu	Phe	Leu	Met	Ile	Gly	Asp	Ser	Ala	Ile	Leu	Gln	Lys	Tyr
		50				55				60					
Pro	Ser	Leu	Gln	Lys	Tyr	Pro	Glu	Tyr	Val	Lys	Thr	Leu	His	Ile	Glu
65				70					75					80	
Asp	Pro	Asp	Glu	Ala	Ala	Arg	Glu	Ala	Val	Arg	Ile	Val	Arg	Glu	Gly
			85					90						95	
Gly	Ala	Asp	Ile	Leu	Met	Lys	Gly	Ile	Ile	Asn	Thr	Asp	Asn	Leu	Leu
			100				105						110		
His	Ala	Ile	Leu	Asp	Lys	Glu	Lys	Gly	Leu	Leu	Pro	Lys	Gly	Lys	Ile
		115					120					125			
Leu	Thr	His	Leu	Ala	Val	Met	Gln	Ile	Pro	Thr	Tyr	Asp	Lys	Leu	Leu
		130				135					140				
Phe	Phe	Ser	Asp	Ala	Ala	Val	Ile	Pro	Arg	Pro	Thr	Leu	Gln	Gln	Arg
145				150					155					160	
Ile	Glu	Met	Ile	Trp	Tyr	Ala	Ile	Cys	Thr	Cys	Arg	Arg	Phe	Gly	Ile
			165					170						175	
Glu	Gln	Pro	Arg	Ile	Ser	Leu	Ile	His	Cys	Thr	Glu	Lys	Val	Ser	Ala
		180					185						190		
Lys	Phe	Pro	His	Ser	Leu	Asp	Tyr	Val	Asn	Ile	Val	Glu	Leu	Ala	Glu
		195				200						205			
Ala	Gly	Glu	Phe	Gly	Asn	Val	Ile	Ile	Asp	Gly	Pro	Leu	Asp	Val	Arg
		210			215					220					
Thr	Ser	Cys	Glu	Gln	Ala	Ser	Gly	Asp	Ile	Lys	Gly	Ile	Val	Ser	Pro
225				230					235					240	
Ile	Asn	Gly	Gln	Ala	Asp	Val	Leu	Ile	Phe	Pro	Asn	Ile	Glu	Ser	Gly
			245					250						255	
Asn	Ala	Phe	Tyr	Lys	Ser	Val	Ser	Leu	Phe	Ala	Lys	Ala	Asp	Met	Ala
			260					265					270		

Gly	Leu	Leu	Gln	Gly	Pro	Ile	Cys	Pro	Val	Val	Leu	Pro	Ser	Arg	Ser
	275						280					285			
Asp	Ser	Gly	Leu	Ser	Lys	Tyr	Tyr	Ser	Ile	Ala	Met	Ala	Cys	Leu	Thr
	290					295					300				
Ala	Ser	Thr	Arg	Ser	Ala	Glu	Arg	Gly	Arg	Cys	Ser	Glu			
305					310					315					

<210> 9352

<211> 548

<212> PRT

<213> B.fragilis

<220>

<221> UNSURE

<222> (118)

<223> Identity of amino acid sequences at the above locations are unknown.

<400> 9352

Ser	Asp	Tyr	Ser	Leu	Asn	Lys	Phe	Arg	Met	Asn	Lys	Leu	Leu	Ile	Met
1			5						10					15	
Arg	Thr	His	Leu	Leu	Trp	Ile	Gly	Val	Met	Thr	Ala	Ser	Ser	Leu	Trp
			20					25					30		
Leu	Ser	Gly	Cys	Thr	Gln	Glu	Glu	Lys	Tyr	Pro	Phe	Phe	Pro	Glu	Lys
		35					40					45			
Gly	Tyr	Asp	Ser	Gly	Thr	Val	Ile	Pro	Ile	Lys	Ile	Ser	Met	Ala	Glu
	50					55					60				
Asn	Gly	Glu	Tyr	Asp	Ser	Tyr	Thr	Pro	Glu	Asn	Asp	Met	Ala	Pro	Arg
65					70					75				80	
Tyr	Asn	Ala	Pro	Leu	Ile	Ala	Glu	Trp	Ala	Gly	Val	Gln	Thr	Leu	Ser
				85					90					95	
Arg	Thr	Arg	Thr	Lys	Glu	Ser	Pro	Glu	Tyr	Asn	Gly	Pro	Arg	Ile	Ala
			100					105					110		
Ser	Met	Glu	Leu	Thr	Xaa	Asn	Thr	Pro	Ser	Thr	Leu	Thr	Thr	Arg	Ala
	115					120					125				
Asn	Thr	Leu	Ser	Thr	Gly	Val	Tyr	Phe	Arg	Leu	Ile	Val	Phe	Arg	Lys
	130				135						140				
Ser	Gly	Asn	Asn	Tyr	Val	Phe	Gln	Ser	Ala	Ala	Asp	Tyr	Thr	Ser	Asn
145					150					155					160
Gly	Ala	Ser	Ser	Pro	Val	Leu	Lys	Lys	Gly	Lys	Leu	Leu	Thr	Arg	Ser
			165						170					175	
Gly	Thr	Ile	Arg	Val	Ile	Gly	Tyr	Ser	Phe	Asn	Thr	Thr	Ala	Ala	Leu
		180						185					190		
Gly	Asp	Ile	Pro	Ala	Ser	Tyr	Thr	Tyr	Asn	Thr	Thr	Lys	Ile	Asp	Ile
	195						200					205			
Pro	Asn	Met	Asn	Asn	Asp	Phe	Met	Thr	Tyr	Asp	Ser	Gly	Asp	Ile	Ala
	210					215					220				
Asn	Val	Asn	Ser	Leu	Asn	Tyr	Asn	Leu	Pro	Val	Thr	Phe	Lys	Gln	Lys
225					230					235					240
Leu	Cys	Lys	Leu	Thr	Ile	Ser	Ile	Ser	Val	Thr	Gly	Phe	Thr	Ser	Asn
			245						250					255	
Thr	Ile	Ser	Gly	Cys	Thr	Gly	Val	Tyr	Val	Lys	Gln	Gly	Gly	Asn	Ser
		260						265					270		
Thr	Ser	Trp	Val	Ile	Gly	Ser	Ser	Ala	Val	Ala	Ala	Asn	Thr	Ser	Asn
		275					280					285			
Thr	Ala	Ser	Phe	Asn	Pro	Asn	Thr	Asn	Gln	Thr	Thr	Thr	Ile	Arg	Met
	290					295					300				
Val	Pro	Phe	Ala	Ser	Ser	Arg	Thr	Ile	Thr	Val	His	Phe	Asn	Lys	Leu
305					310					315					320
Thr	Val	Gly	Asn	Leu	Ile	Ala	Asn	Asn	Ala	Asp	Asn	Ile	Asp	Ile	Ala

325 330 335
 Ser Thr Gln Ser Val Gln Leu Lys Glu Gly Met Ser Tyr Thr Met Lys
 340 345 350
 Ile Gln Phe Lys Arg Ser Pro Gly Ile Asn Val Pro Ala Gly Ser Ile
 355 360 365
 Asn Leu Ser Asn Pro Lys Lys Ala Cys Thr Asn Asp Asp Lys Gln Lys
 370 375 380
 Leu Ser Lys Leu Val Phe Ala Asp Gly Asn Leu Lys Ser Thr Gly Ala
 385 390 395 400
 Ser Asn Asn Tyr Val Trp Ala Thr Asn Lys Glu Tyr Gly Tyr Tyr Tyr
 405 410 415
 Gln Trp Lys Lys Asp Tyr Asn Gly Asn Asn Ile Asp Pro Cys Ala Arg
 420 425 430
 Leu Asn Pro Thr Thr Tyr Gly Ser Gly Trp Arg Leu Pro Thr Arg Asn
 435 440 445
 Glu Leu Glu Arg Leu Gly Arg Cys Asn Asn Val Lys Lys Val Ser Asn
 450 455 460
 Gly Val Asn Gly Leu Trp Phe Leu Asn Ala Thr Thr Gly Ile Phe Leu
 465 470 475 480
 Pro Leu Gly Gly Trp Arg Asn Asn Asn Ser Gly Thr Thr Ala Glu Asp
 485 490 495
 Trp Pro Gly Thr Phe Gly Gln Tyr Phe Thr Asp Glu Ser Ile Asn Thr
 500 505 510
 Asn Asp Cys Tyr Arg Leu Asp Ile Ser Pro Gly Glu Gly Lys Thr Asp
 515 520 525
 Val Asn Ser Thr Gln Lys Lys Met Ala Tyr Thr Thr Arg Cys Val Lys
 530 535 540
 Gly Pro Lys Leu
 545

<210> 9353
 <211> 88
 <212> PRT
 <213> B.fragilis

<400> 9353
 Thr Leu Asp Ala Asn Ser Tyr Ser Ala Trp Arg Ile Gly Gly Arg Leu
 1 5 10 15
 Ser Phe Lys Asn Glu Thr Leu Ala Met Ile Leu Pro Arg Leu Glu Lys
 20 25 30
 Trp Tyr Gly Gln Lys Ile Asp Cys Pro Gln Lys Thr Ala Asp His Tyr
 35 40 45
 Arg Phe Thr Phe Thr Leu Arg Asn Glu Pro Leu Asp Leu Ile Leu Asn
 50 55 60
 Ile Met Ser His Ser Ala Pro Leu Asn Tyr Lys Leu Ile Ser Asn Asp
 65 70 75 80
 Tyr Tyr Val Leu Glu Glu Leu Lys
 85

<210> 9354
 <211> 388
 <212> PRT
 <213> B.fragilis

<400> 9354
 Leu Ile Val Phe Met Arg Lys Cys Asn Met Arg Trp Phe Ser Pro Gln
 1 5 10 15
 Arg Met Lys Lys His Leu Ala Phe Ala Leu Ala Val Ser Leu Val Ala
 20 25 30

Met Val Pro Val Ser Ala Phe Ala Gln Val Leu Lys Ile Ser Met Thr
 35 40 45
 Lys Thr Asn Val Ser Ile Glu Asn Val Leu Arg Glu Leu Glu Lys Gln
 50 55 60
 Ser Asp Tyr Thr Phe Phe Tyr Asn Asp Ile Gln Val Lys Leu Asn Lys
 65 70 75 80
 Lys Val Ser Ile Asn Val Ser Asp Ala Pro Ile Glu Thr Val Leu Asn
 85 90 95
 Glu Val Phe Lys Asn Ser Gly Tyr Thr Tyr Lys Ile Val Asp Asn Gln
 100 105 110
 Ile Val Val Ser Thr Ala Ala Ala Ala Lys Glu Val Gln Ala Thr
 115 120 125
 Gln Gln Gln Lys Gln Arg Lys Ile Ser Gly Val Val Lys Asp Ala Met
 130 135 140
 Gly Glu Ala Ile Ile Gly Ala Ser Val Ile Glu Lys Gly Asn Pro Thr
 145 150 155 160
 Asn Gly Thr Ile Thr Asn Ile Asp Gly Glu Phe Thr Leu Asn Thr Ala
 165 170 175
 Gly Lys Glu Leu Gln Val Thr Tyr Ile Gly Tyr Ile Pro Gln Ala Ile
 180 185 190
 Val Leu Lys Pro Gly Val Asn Ser Tyr Thr Val Thr Met Lys Glu Asp
 195 200 205
 Thr Lys Thr Leu Asp Glu Val Val Val Gly Tyr Gly Thr Gln Lys
 210 215 220
 Lys Val Asn Leu Thr Gly Ala Val Ser Ser Val Gly Ala Asp Glu Leu
 225 230 235 240
 Lys Glu Arg Val Asn Thr Asp Val Leu Ala Ser Val Gln Gly Gln Val
 245 250 255
 Pro Gly Val Thr Ile Ile Ser Gly Pro Gly Ser Thr Pro Ser Ile Asn
 260 265 270
 Met Arg Gly Arg Gly Asn Leu Gly Thr Ser Ser Pro Leu Phe Val Ile
 275 280 285
 Asp Gly Ala Ile Ala Asp Ala Ser Phe Phe Ser Ser Leu Asp Pro Asn
 290 295 300
 Ser Ile Glu Ser Ile Ser Phe Leu Lys Asp Ala Ala Ser Ser Ala Ile
 305 310 315 320
 Tyr Gly Ser Arg Ala Ala Tyr Gly Val Val Leu Val Lys Thr Lys Gly
 325 330 335
 Gly Lys Glu Gly Asp Leu Lys Ile Ser Tyr Asp Gly Ser Val Ala Val
 340 345 350
 Lys Met Ala Thr Tyr Thr Pro Asp Val Leu Gly Ser Glu Trp Tyr Ala
 355 360 365
 Arg Leu Ser Asn Glu Ala Ala Val Phe Thr Ala Glu Cys Gln Thr Thr
 370 375 380
 Leu Tyr Cys Pro
 385

<210> 9355

<211> 71

<212> PRT

<213> B.fragilis

<400> 9355

Ile Leu Phe Leu Val Cys Phe Pro Lys Phe Arg Met Asn Leu Ala Phe
 1 5 10 15
 Tyr Phe Ile His Tyr Phe Gln Lys Tyr Arg Val Leu Leu Lys Phe Phe
 20 25 30
 Glu Asn Tyr Gly Val Phe Ser Leu Leu Leu Phe Leu Phe Leu Asp Ser
 35 40 45

Thr Tyr Ile Leu Ile Ile Leu Tyr Phe Leu Ser Phe Cys Ile Phe Tyr
 50 55 60
 Pro Ile Cys Ile Ala Cys Phe
 65 70

<210> 9356
 <211> 62
 <212> PRT
 <213> B.fragilis

<400> 9356
 His Arg Ala Lys Met Lys Phe Lys Ser Pro Pro Leu Lys Ser Tyr Leu
 1 5 10 15
 Leu Pro Leu Ile Asp Tyr Asn Ser Thr Ile Ile Asn Ile Ile Asn Ser
 20 25 30
 Tyr Tyr Lys His His Ile Ala Ser Arg Phe Arg Ile Tyr Val Ala Asn
 35 40 45
 Lys Ser Tyr Thr Thr Arg Phe Val Cys His Lys Leu Phe Tyr
 50 55 60

<210> 9357
 <211> 79
 <212> PRT
 <213> B.fragilis

<400> 9357
 Gly Thr His Thr Met Arg Leu Ser Glu Leu Lys Thr Gly Glu Lys Gly
 1 5 10 15
 Val Ile Val Lys Val Leu Val His Gly Gly Phe Arg Asp Arg Ile Val
 20 25 30
 Glu Met Gly Phe Ile Lys Gly Lys Pro Val Gly Val Leu Leu Asn Ala
 35 40 45
 Pro Leu Thr Asp Arg Ile Ser Tyr Ala Ile Met Gly Tyr Val Ile Ser
 50 55 60
 Leu Arg Arg Gln Glu Ala Asp Met Ile Glu Ile Ile Ser Glu Gln
 65 70 75

<210> 9358
 <211> 790
 <212> PRT
 <213> B.fragilis

<400> 9358
 Ser Cys Gln Thr Lys His Arg Ile Arg Lys Leu Met Asn Gln Ile Leu
 1 5 10 15
 Lys Pro His Asn Leu Pro Pro Ser Phe Gln Gly Arg Gly Trp Lys Ile
 20 25 30
 Ser Ile Lys Ser Trp Trp Lys Pro Ala Leu Phe Leu Leu Leu Val Leu
 35 40 45
 Tyr Ile Phe Cys Leu Pro Ser Gln Leu Phe Thr Ser Pro Tyr Ser Thr
 50 55 60
 Val Val Thr Asp Arg Asn Gly Glu Leu Leu Gly Ala Arg Ile Ala Thr
 65 70 75 80
 Asp Gly Gln Trp Arg Phe Pro Pro Arg Glu Asn Ile Pro Glu Lys Val
 85 90 95
 Ala Thr Cys Leu Ile Glu Phe Glu Asp Arg Gln Phe Tyr His His Trp
 100 105 110
 Gly Val Asn Pro Leu Ala Ile Gly Arg Ala Val Val Gln Asn Leu Lys
 115 120 125

117 118 119 120 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140 141 142 143 144 145 146 147 148 149 150 151 152 153 154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184 185 186 187 188 189 190 191 192 193 194 195 196 197 198 199 200 201 202 203 204 205 206 207 208 209 210 211 212 213 214 215 216 217 218 219 220 221 222 223 224 225 226 227 228 229 230 231 232 233 234 235 236 237 238 239 240 241 242 243 244 245 246 247 248 249 250 251 252 253 254 255 256 257 258 259 260 261 262 263 264 265 266 267 268 269 270 271 272 273 274 275 276 277 278 279 280 281 282 283 284 285 286 287 288 289 290 291 292 293 294 295 296 297 298 299 300 301 302 303 304 305 306 307 308 309 310 311 312 313 314 315 316 317 318 319 320 321 322 323 324 325 326 327 328 329 330 331 332 333 334 335 336 337 338 339 340 341 342 343 344 345 346 347 348 349 350 351 352 353 354 355 356 357 358 359 360 361 362 363 364 365 366 367 368 369 370 371 372 373 374 375 376 377 378 379 380 381 382 383 384 385 386 387 388 389 390 391 392 393 394 395 396 397 398 399 400 401 402 403 404 405 406 407 408 409 410 411 412 413 414 415 416 417 418 419 420 421 422 423 424 425 426 427 428 429 430 431 432 433 434 435 436 437 438 439 440 441 442 443 444 445 446 447 448 449 450 451 452 453 454 455 456 457 458 459 460 461 462 463 464 465 466 467 468 469 470 471 472 473 474 475 476 477 478 479 480 481 482 483 484 485 486 487 488 489 490 491 492 493 494 495 496 497 498 499 500 501 502 503 504 505 506 507 508 509 510 511 512 513 514 515 516 517 518 519 520 521 522 523 524 525 526 527 528 529 530 531 532 533 534 535 536 537 538 539 540 541 542 543 544 545 546 547 548 549 550 551 552 553 554 555 556 557 558 559 560 561 562 563 564 565 566 567 568 569 570 571 572 573 574 575 576 577 578 579 580 581 582 583 584 585 586 587 588 589 590 591 592 593 594 595 596 597 598 599 600 601 602 603 604 605 606 607 608 609 610 611 612 613 614 615 616 617 618 619 620 621 622 623 624 625 626 627 628 629 630 631 632 633 634 635 636 637 638 639 640 641 642 643 644 645 646 647 648 649 650 651 652 653 654 655 656 657 658 659 660 661 662 663 664 665 666 667 668 669 670 671 672 673 674 675 676 677 678 679 680 681 682 683 684 685 686 687 688 689 690 691 692 693 694 695 696 697 698 699 700 701 702 703 704 705 706 707 708 709 710 711 712 713 714 715 716 717 718 719 720 721 722 723 724 725 726 727 728 729 730 731 732 733 734 735 736 737 738 739 740 741 742 743 744 745 746 747 748 749 750 751 752 753 754 755 756 757 758 759 760 761 762 763 764 765 766 767 768 769 770 771 772 773 774 775 776 777 778 779 780 781 782 783 784 785 786 787 788 789 790 791 792 793 794 795 796 797 798 799 800 801 802 803 804 805 806 807 808 809 810 811 812 813 814 815 816 817 818 819 820 821 822 823 824 825 826 827 828 829 830 831 832 833 834 835 836 837 838 839 840 841 842 843 844 845 846 847 848 849 850 851 852 853 854 855 856 857 858 859 860 861 862 863 864 865 866 867 868 869 870 871 872 873 874 875 876 877 878 879 880 881 882 883 884 885 886 887 888 889 890 891 892 893 894 895 896 897 898 899 900 901 902 903 904 905 906 907 908 909 910 911 912 913 914 915 916 917 918 919 920 921 922 923 924 925 926 927 928 929 930 931 932 933 934 935 936 937 938 939 940 941 942 943 944 945 946 947 948 949 950 951 952 953 954 955 956 957 958 959 960 961 962 963 964 965 966 967 968 969 970 971 972 973 974 975 976 977 978 979 980 981 982 983 984 985 986 987 988 989 990 991 992 993 994 995 996 997 998 999 1000

His	Lys	Arg	Ile	Val	Ser	Gly	Gly	Ser	Thr	Leu	Thr	Met	Gln	Thr	Ile
130						135					140				
Arg	Leu	Ala	Arg	Asn	Lys	Pro	Arg	Thr	Phe	Lys	Glu	Lys	Leu	Ile	Glu
145					150					155					160
Met	Val	Trp	Ala	Thr	Arg	Leu	Glu	Phe	Arg	Lys	Ser	Lys	Lys	Glu	Ile
				165					170					175	
Leu	Ser	Leu	Tyr	Ile	Ser	His	Ala	Pro	Phe	Gly	Gly	Asn	Val	Val	Gly
			180					185					190		
Leu	Asp	Ala	Ala	Ala	Trp	Arg	Tyr	Phe	Gly	His	Ser	Ala	Glu	Glu	Leu
	195						200					205			
Ser	Trp	Ala	Glu	Ser	Ala	Met	Leu	Ala	Val	Leu	Pro	Asn	Ser	Pro	Ala
	210					215					220				
Met	Ile	His	Leu	Ser	Lys	Ser	Arg	Gln	Ala	Leu	Leu	Asp	Lys	Arg	Asn
225					230					235					240
Arg	Leu	Leu	Thr	His	Leu	His	Lys	Lys	Gly	Ile	Leu	Asp	Thr	Ser	Thr
				245					250					255	
Tyr	Glu	Leu	Ala	Ile	Ser	Glu	Pro	Leu	Pro	Gln	Glu	Pro	Leu	Pro	Leu
			260					265					270		
Pro	His	Ile	Ala	Pro	His	Leu	Thr	Asp	Tyr	Phe	Tyr	Gln	Thr	Arg	Asn
	275						280					285			
Gly	Lys	Tyr	Ser	Val	Ser	Thr	Ile	Asp	Arg	Gly	Ile	Gln	Thr	Gln	Ile
	290					295					300				
Glu	Ser	Leu	Val	Glu	Arg	Trp	Asn	Ser	Glu	Phe	Lys	Arg	Ser	Asp	Ile
305					310					315					320
Arg	Asn	Leu	Ala	Ile	Leu	Val	Ile	Asp	Ile	Arg	Thr	Asn	Gln	Ala	Ile
				325					330					335	
Ala	Tyr	Cys	Gly	Asn	Val	His	Phe	Asp	Lys	Glu	Gln	Ser	Gly	Asn	Gln
			340					345					350		
Val	Asp	Val	Ile	Arg	Ser	Pro	Arg	Ser	Thr	Gly	Ser	Ile	Leu	Lys	Pro
	355						360					365			
Phe	Leu	Tyr	Tyr	Ala	Met	Leu	Gln	Glu	Gly	Glu	Ile	Leu	Pro	Asn	Thr
	370				375					380					
Leu	Leu	Pro	Asp	Ile	Pro	Val	Asn	Ile	Asn	Gly	Phe	Thr	Pro	Gln	Asn
385					390					395					400
Phe	Asn	Leu	Gln	Phe	Glu	Gly	Ala	Val	Pro	Ala	Ser	Glu	Ala	Ile	Ala
			405						410					415	
Arg	Ser	Leu	Asn	Ile	Pro	Ser	Val	Thr	Met	Leu	Gln	Arg	Tyr	Gly	Val
			420					425					430		
Pro	Lys	Phe	His	Ser	Phe	Leu	Lys	Gln	Ile	Gly	Leu	Thr	Thr	Leu	Asn
	435						440					445			
Arg	Pro	Ser	Ser	His	Tyr	Gly	Leu	Ser	Leu	Ile	Leu	Gly	Gly	Ala	Glu
	450					455					460				
Ala	Thr	Leu	Trp	Asp	Ile	Thr	Ser	Ala	Tyr	Ala	Asn	Met	Gly	Arg	Ser
465					470					475					480
Leu	Asn	Arg	Leu	Pro	Gln	Phe	Pro	Cys	Thr	Leu	Leu	Leu	Ser	Asp	Ser
				485					490					495	
Ile	Ser	Val	His	Arg	Pro	Ser	Phe	Gln	Ser	Gly	Ala	Val	Trp	Gln	Thr
			500					505					510		
Phe	Asp	Ala	Ile	Lys	Glu	Val	Asn	Arg	Pro	Glu	Glu	Ile	Asp	Trp	Arg
	515						520					525			
Thr	Ile	Pro	Ser	Met	Gln	Thr	Ile	Ala	Trp	Lys	Thr	Gly	Thr	Ser	Tyr
	530					535					540				
Gly	Phe	Arg	Asp	Ala	Trp	Ala	Val	Gly	Val	Thr	Pro	Lys	Tyr	Ala	Val
545					550					555					560
Gly	Val	Trp	Val	Gly	Asn	Ala	Thr	Gly	Glu	Gly	Lys	Pro	Gly	Leu	Val
				565					570					575	
Gly	Ala	Arg	Thr	Ala	Gly	Pro	Val	Leu	Phe	Asp	Val	Phe	Asn	Leu	Leu
			580					585				590			
Pro	Ser	Ser	Pro	Trp	Phe	Glu	Arg	Pro	Gln	Gly	Glu	Leu	Val	Glu	Ala

130 135 140 145 150 155 160 165 170 175 180 185 190 195 200 205 210 215 220 225 230 235 240 245 250 255 260 265 270 275 280 285 290 295 300 305 310 315 320 325 330 335 340 345 350 355 360 365 370 375 380 385 390 395 400 405 410 415 420 425 430 435 440 445 450 455 460 465 470 475 480 485 490 495 500 505 510 515 520 525 530 535 540 545 550 555 560 565 570 575 580 585 590

595	600	605
Glu Ile Cys Arg Gln Ser Gly His Leu Lys Gly Arg Phe Cys Glu Glu		
610	615	620
Thr Asp Thr Leu Leu Ile Leu Pro Ala Gly Leu Lys Thr Glu Ala Cys		
625	630	635
Pro Tyr His His Pro Val Thr Leu Ser Ala Asn Glu Arg Phe Arg Ile		
	645	650
Tyr Glu Asn Cys Ala Asn Ser Glu Pro Val Val Arg Arg Asn Trp Phe		
	660	665
Thr Leu Pro Pro Val Trp Glu Trp Tyr Tyr Lys Gln His His Pro Glu		
	675	680
Tyr Arg Pro Leu Pro Pro Phe Lys Ser Gly Cys Gly Glu Asp Arg Phe		
	690	695
Gln Pro Met Gln Phe Ile Tyr Pro Pro Met Gly Ala Arg Ile His Leu		
705	710	715
Pro Lys Gln Met Asp Gly Ser Lys Gly Gln Leu Thr Val Glu Leu Val		
	725	730
His Ser His Pro Asn Thr Thr Ile Tyr Trp His Leu Asp Glu Thr Tyr		
	740	745
Leu Thr Gln Thr Gln Asp Phe His Lys Leu Ser Leu Arg Pro Ser Pro		
	755	760
Gly Lys His Ser Leu Thr Ala Val Asp Asp Glu Gly Asn Thr Ile Ser		
	770	775
Thr Thr Phe Phe Val Glu		780
785	790	

<210> 9359

<211> 442

<212> PRT

<213> B.fragilis

<400> 9359

Gln Asn Tyr Tyr Leu Cys Asn Met Ile Gln Asn Arg Val Ala Gln Tyr		
1	5	10
Ile Glu Lys Glu Lys Leu Phe Cys Leu Asn Asp Lys Val Leu Val Thr		
	20	25
Leu Ser Gly Gly Ala Asp Ser Val Ala Leu Leu Arg Leu Leu Ser		
	35	40
Met Gly Tyr Thr Cys Glu Ala Ala His Cys Asn Phe His Leu Arg Asp		
	50	55
Lys Glu Ser Asp Arg Asp Glu Ala Phe Val Arg Arg Leu Cys His Glu		
65	70	75
Ser Gly Val Leu Leu His Ile Glu His Phe Asp Thr Thr Gln Tyr Ala		
	85	90
Ala Lys Lys His Ile Ser Ile Glu Met Ala Ala Arg Glu Leu Arg Tyr		
	100	105
Glu Trp Phe Glu Thr Leu Arg Lys Gln Arg Glu Ala Ser Val Ile Ala		
	115	120
Thr Ala His His Lys Asp Asp Ser Val Glu Thr Val Leu Leu Asn Leu		
	130	135
Ile Arg Gly Thr Gly Ile Asn Gly Leu Leu Gly Ile Arg Pro Arg Asn		
145	150	155
Gly Asn Ile Val Arg Pro Leu Leu Cys Leu Ser Arg Glu Glu Ile Ile		
	165	170
Ala Tyr Leu Gln Tyr Ile Asp Gln Asp Tyr Val Thr Asp Ser Thr Asn		
	180	185
Leu Leu Asp Glu Tyr Thr Arg Asn Lys Ile Arg Leu Asn Leu Leu Pro		
	195	200
Leu Met Lys Glu Ile Asn Pro Ser Val Lys Glu Ser Ile Ile Arg Thr		

210	215	220
Thr Asn Tyr Leu Asn Asp	Ala Ala Thr Leu Tyr Asn Gln Ser Ile Gly	
225	230	235
Glu Ala Arg Lys Arg Ile Leu Thr Pro Glu Gly Ile Arg Ile Glu Ala		240
	245	250
Leu Leu Gln Glu Pro Val Pro Glu Ala Ile Leu Phe Glu Val Leu His		255
	260	265
Pro Leu Gly Phe Asn Thr Thr Gln Ile Asp Asn Ile Arg Gln Thr Leu		270
	275	280
Asp Gly Gln Pro Gly Lys Val Phe Leu Gly Lys Gly Trp Arg Val Ile		285
	290	295
Lys Asp Arg Asp Leu Leu Leu Ile Glu Glu Asp Thr Thr Ala Glu Glu		300
	305	310
Ser Gln Pro Pro Phe Arg Leu Val Met Glu Glu Tyr Asp Tyr Thr Ser		315
	325	330
Glu Phe Ile Ile Pro Lys Asp Lys Asn Thr Ala Cys Phe Asp Ala Asp		335
	340	345
Lys Ile Asn Lys Thr Trp Glu Ile Arg Lys Trp Lys Pro Gly Asp Val		350
	355	360
Phe Ile Pro Phe Gly Met Thr Gly Lys Lys His Val Ser Asp Tyr Leu		365
	370	375
Thr Asp Lys Lys Phe Ser Leu Ser Glu Lys Glu Lys Gln Trp Val Leu		380
	385	390
Cys Phe Gly Glu Gln Ile Ala Trp Leu Ile Gly Glu Arg Thr Asp Asn		395
	405	410
Arg Phe Lys Val Asn Glu Asn Thr Lys Arg Val Ile Ile Val Arg Ile		415
	420	425
Val Ser Glu His Ser Asp Phe Ile Glu Glu		430
	435	440

<210> 9360

<211> 182

<212> PRT

<213> B.fragilis

<400> 9360

Leu Arg Cys Lys Ser His Lys Lys Cys Thr Phe Ala Thr Glu Phe Phe		
1	5	10
Tyr Gly Gln Ile Met Arg Glu Tyr Ile Ala Asp Asn Gln Asp Ile		15
	20	25
Thr Lys Ala Gly Met Met Phe Leu Leu Ser Lys Gln Lys Glu Val Ser		30
	35	40
Leu Leu Leu Glu Ala Asp Asn Lys Met Glu Leu Val Gln Leu Leu Arg		45
	50	55
Ile His Pro Gln Ala Val Val Ile Leu Asp Tyr Thr Leu Phe Asp Phe		60
	65	70
Ser Gly Ala Asp Glu Leu Ile Ile Leu Gln Glu Arg Phe Lys Glu Ser		75
	85	90
Asp Trp Leu Leu Phe Ser Asp Glu Leu Ser Ile Gly Phe Leu Arg Gln		95
	100	105
Val Leu Phe Ser Ser Asn Ala Phe Gly Val Val Leu Lys Asp Asn Ser		110
	115	120
Asn Lys Glu Ile Met Thr Ala Leu His Cys Ala Ser Arg Lys Glu Arg		125
	130	135
Ser Ile Cys Asn Asp Val Ser Asn Pro Ala Leu Cys Gly Ser Gly Lys		140
	145	150
Leu Thr Thr Cys Leu Gly Arg Ala His Val Leu Tyr Arg Met Asn Thr		155
	165	170
Arg Leu Leu His Thr Arg		175

180

<210> 9361
 <211> 350
 <212> PRT
 <213> B.fragilis

<400> 9361

Thr	Pro	Tyr	Arg	Gln	Leu	Pro	Arg	Ile	Ser	Glu	Arg	Leu	Lys	Ser	Thr
1				5					10					15	
Gly	Ser	Gln	Lys	Lys	Gly	Ala	Leu	Pro	Ile	Leu	Asn	Val	Ala	Lys	Glu
			20					25					30		
Leu	Leu	Asn	Ile	Pro	Thr	Gln	Leu	His	Glu	Ile	Asn	Asp	Ile	Cys	Ala
		35					40					45			
Ile	Tyr	Cys	Ile	Phe	Ala	Lys	Leu	Lys	Val	Met	Lys	Met	Asp	Leu	Lys
	50					55					60				
Lys	Glu	Val	Lys	Glu	Glu	Phe	Ile	Arg	Phe	Gln	Arg	Asn	Glu	Lys	Thr
65					70					75					80
Glu	Ser	Ile	Val	Tyr	Glu	Arg	Val	Pro	Phe	Ile	Glu	Lys	Asp	Glu	Ser
				85					90					95	
Thr	Arg	Lys	Val	Leu	Arg	Leu	Ile	Ser	Ala	Glu	Glu	Lys	Ala	His	Tyr
			100					105						110	
Ala	Thr	Leu	Lys	Lys	Tyr	Thr	Glu	Thr	Asp	Val	Ala	Pro	Asp	Lys	Leu
		115					120						125		
Gly	Ile	Ala	Lys	Tyr	Tyr	Trp	Leu	Ala	Arg	Ile	Leu	Gly	Ile	Thr	Phe
	130					135					140				
Ala	Ile	Lys	Leu	Met	Glu	Ser	Ser	Glu	Glu	Asn	Ala	His	His	Asp	Tyr
145					150					155					160
Ala	Lys	Tyr	Thr	Asp	Tyr	Pro	Asp	Leu	Arg	Gln	Leu	Ala	Asn	Glu	Glu
				165					170					175	
Glu	Val	His	Glu	Gln	Lys	Leu	Ile	Gly	Leu	Ile	Asn	Glu	Ala	Arg	Leu
			180					185					190		
Glu	Tyr	Met	Gly	Ser	Val	Val	Leu	Gly	Leu	Asn	Asp	Ala	Leu	Val	Glu
	195						200					205			
Phe	Thr	Gly	Ala	Leu	Ala	Gly	Phe	Thr	Leu	Ala	Leu	Ser	Asp	Ser	Arg
	210					215						220			
Leu	Ile	Ala	Leu	Thr	Gly	Ser	Ile	Thr	Gly	Ile	Ala	Ala	Ala	Leu	Ser
225					230					235					240
Met	Ala	Ser	Ser	Glu	Tyr	Leu	Ser	Thr	Lys	Ser	Glu	Gly	Gly	Glu	Thr
				245					250					255	
Lys	His	Pro	Ile	Lys	Ala	Ala	Ile	Tyr	Thr	Gly	Ile	Ala	Tyr	Ile	Ile
			260					265					270		
Thr	Val	Val	Ala	Leu	Val	Ala	Pro	Phe	Ile	Leu	Ile	Glu	Asn	Val	Leu
			275				280						285		
Ile	Ala	Leu	Gly	Val	Met	Leu	Ala	Met	Ala	Leu	Val	Ile	Ile	Ala	Leu
	290					295					300				
Phe	Asn	Tyr	Tyr	Tyr	Ser	Val	Ala	Arg	Gly	Glu	Ser	Phe	Arg	Lys	Arg
305					310					315					320
Phe	Thr	Glu	Met	Ala	Val	Leu	Ser	Phe	Ser	Val	Ala	Gly	Ile	Ser	Phe
				325					330					335	
Leu	Ile	Gly	Tyr	Ala	Leu	Lys	Thr	Phe	Thr	Gly	Ile	Asp	Ala		
			340					345					350		

<210> 9362
 <211> 93
 <212> PRT
 <213> B.fragilis

<400> 9362

Tyr Ile Ser Arg Gln Pro Asn Ser Ser Pro Ile Asn Pro Leu Thr Thr
 1 5 10 15
 Arg Glu Ala Lys Met Pro Val Ser Ser Pro Asp Thr Thr Ile Pro Thr
 20 25 30
 Phe Leu Pro Leu Phe Ser Gly Arg Glu Asn Trp Glu Ala Ile Gly Met
 35 40 45
 Asn Ile Cys Gly Ile Thr Glu Gln Met Pro Val Arg Ser Glu Ala His
 50 55 60
 Arg Met Thr Trp Met Leu Gly Ala Ile Ala Ile Thr Ser Asn Glu Thr
 65 70 75 80
 Ile Asn Met Glu Lys Leu Val Arg Met Ile Arg Phe Arg
 85 90

<210> 9363

<211> 299

<212> PRT

<213> B.fragilis

<400> 9363

Asp Leu Lys Arg Val Ala Leu Gly Lys Arg Arg Thr Ile Asn Val Ala
 1 5 10 15
 Leu Val Gly Asn Pro Tyr Cys Gly Lys Thr Ser Leu Phe Asn Leu Ala
 20 25 30
 Ser Gly Ala His Glu His Val Gly Asn Tyr Ser Gly Val Thr Val Asp
 35 40 45
 Ala Lys Glu Gly Tyr Phe Asp Phe Gln Gly Tyr His Phe Lys Ile Val
 50 55 60
 Asp Leu Pro Gly Thr Tyr Ser Leu Ser Ala Tyr Thr Pro Glu Glu Ile
 65 70 75 80
 Tyr Val Arg Arg His Ile Ile Asp Glu Thr Pro Asp Val Ile Ile Asn
 85 90 95
 Val Val Asp Ser Ser Asn Leu Glu Arg Asn Leu Tyr Leu Thr Thr Gln
 100 105 110
 Leu Ile Asp Met Asn Val Arg Met Val Val Ala Leu Asn Met Tyr Asp
 115 120 125
 Glu Leu Glu Ala Ser Gly Asn Thr Leu Asp Tyr Leu Leu Leu Gly Lys
 130 135 140
 Leu Phe Gly Val Pro Met Val Pro Thr Val Cys Lys Arg Asn Ile Gly
 145 150 155 160
 Val Asp Arg Leu Phe His Val Val Ile Asn Leu Tyr Glu Gly Ala Asp
 165 170 175
 Phe Ile Asp Lys Lys Gly His Ile His Pro Glu Val Ala Lys Glu Ile
 180 185 190
 Met Asp Trp His Gln Ser Leu Pro Asn Phe Lys Asp His Gly Glu His
 195 200 205
 Pro Ala Asp Tyr Thr His Gly Lys Glu Pro Val Gly Lys Val Phe Arg
 210 215 220
 His Ile His Ile Asn His Gly Pro Asp Leu Glu Lys Ala Ile Asp Ala
 225 230 235 240
 Val Lys Glu Glu Ile Ser Lys Asn Glu Phe Ile Arg His Lys Tyr Ser
 245 250 255
 Thr Arg Tyr Leu Ala Ile Lys Leu Leu Glu Asn Asp Pro Glu Ile Glu
 260 265 270
 Arg Phe Ile His Thr Leu Pro Asn Ala Val Glu Val Glu Lys Ser Leu
 275 280 285
 His His Gly Ala Gly Arg Ile Ser Ala Val Gln
 290 295

<210> 9364

<211> 208
 <212> PRT
 <213> B.fragilis

<400> 9364

Thr	Asn	Asn	Ser	Phe	Lys	Pro	Lys	Gln	Lys	Lys	Val	Met	Lys	Lys	Phe
1				5					10					15	
Ile	Ala	Leu	Val	Ala	Leu	Val	Leu	Val	Ser	Ala	Ser	Thr	Leu	Met	Tyr
			20					25					30		
Ala	Gln	Glu	Ser	Gln	Arg	Asp	Ile	Arg	Arg	Ala	Asp	Arg	Lys	Ala	Gln
		35					40					45			
Arg	Asp	Ala	Glu	Arg	Ala	Arg	Leu	Lys	Ala	Glu	Glu	Gln	Ala	Ala	Asp
	50					55					60				
Gln	Val	Ala	Tyr	Gln	Gln	Ala	Val	Gln	Ala	Ile	Lys	Asp	Lys	Gln	Phe
65					70					75					80
Val	Leu	Glu	Ala	Asp	Gln	Val	Ile	Phe	Lys	Arg	Gly	Gln	Thr	Ala	Phe
				85					90					95	
Val	Ser	Ser	Asn	Thr	Asn	Phe	Val	Met	Leu	Asn	Gly	Gln	Arg	Ala	Thr
			100					105					110		
Val	Gln	Val	Ala	Phe	Asn	Thr	Pro	Tyr	Pro	Gly	Pro	Asn	Gly	Ile	Gly
		115					120						125		
Gly	Val	Thr	Val	Asp	Gly	Thr	Thr	Ser	Asp	Val	Lys	Val	Thr	Thr	Asp
	130					135					140				
Lys	Arg	Gly	Asn	Val	Asn	Cys	Asn	Phe	Ser	Val	Gln	Gly	Ile	Gly	Ile
145					150					155					160
Ser	Ala	Gln	Val	Phe	Ile	Thr	Leu	Thr	Asn	Gly	Gly	Asn	Asn	Ala	Thr
				165					170					175	
Val	Thr	Ile	Asn	Pro	Asn	Phe	Asn	Ser	Asn	Thr	Leu	Thr	Leu	Ser	Gly
			180					185					190		
Asn	Leu	Val	Pro	Leu	Asn	Gln	Ser	Asp	Val	Phe	Lys	Gly	Arg	Ser	Trp
		195					200					205			

<210> 9365
 <211> 482
 <212> PRT
 <213> B.fragilis

<400> 9365

Lys	Arg	Lys	Arg	Arg	Ile	Met	Lys	Lys	Ala	Pro	Ser	Pro	Leu	Val	Ser
1				5					10					15	
Leu	Ile	Pro	Leu	Val	Val	Leu	Val	Ile	Met	Leu	Phe	Ala	Thr	Ile	Arg
			20					25					30		
Thr	Phe	Gly	Ser	Asp	Ala	Leu	Ser	Gly	Gly	Ser	Gln	Val	Ser	Leu	Leu
		35					40					45			
Thr	Thr	Thr	Ala	Val	Cys	Ile	Leu	Ile	Gly	Met	Gly	Phe	Tyr	Lys	Ile
	50					55					60				
Gly	Trp	Lys	Asp	Phe	Glu	Leu	Ala	Ile	Thr	Asn	Asn	Ile	Thr	Gly	Val
65					70					75					80
Ser	Thr	Ala	Leu	Ile	Ile	Leu	Leu	Ile	Ile	Gly	Ala	Leu	Ser	Gly	Ala
				85					90					95	
Trp	Met	Ile	Ser	Gly	Val	Val	Pro	Thr	Leu	Ile	Tyr	Tyr	Gly	Val	Gln
			100					105					110		
Ile	Ile	His	Pro	Ser	Phe	Phe	Leu	Thr	Ser	Thr	Cys	Ile	Ile	Cys	Ala
		115					120					125			
Leu	Val	Ser	Val	Met	Thr	Gly	Ser	Ser	Trp	Thr	Thr	Ile	Ala	Thr	Ile
	130					135					140				
Gly	Ile	Ala	Leu	Met	Gly	Ile	Gly	Lys	Ala	Gln	Gly	Phe	Glu	Glu	Gly
145					150					155					160
Trp	Ile	Ala	Gly	Ala	Ile	Ile	Ser	Gly	Ala	Tyr	Phe	Gly	Asp	Lys	Ile

				165				170					175		
Ser	Pro	Leu	Ser	Asp	Thr	Thr	Ile	Leu	Ala	Ala	Ser	Val	Thr	Asp	Thr
			180					185					190		
Pro	Leu	Phe	Arg	His	Ile	Arg	Tyr	Met	Leu	Ile	Thr	Thr	Val	Pro	Ser
		195					200					205			
Leu	Ile	Ile	Thr	Leu	Val	Ile	Phe	Thr	Val	Ala	Gly	Leu	Ser	His	Asn
	210					215					220				
Ala	Gly	Ser	Thr	Glu	His	Ile	Ala	Glu	Phe	Ser	Ala	Ala	Leu	Ala	Gly
225					230					235					240
Lys	Phe	His	Ile	Thr	Pro	Trp	Leu	Leu	Ile	Val	Pro	Val	Val	Thr	Gly
			245						250					255	
Val	Leu	Ile	Ala	Arg	Arg	Val	Pro	Ser	Val	Ile	Thr	Leu	Phe	Leu	Ser
			260					265					270		
Ala	Ala	Leu	Ala	Gly	Ala	Phe	Ala	Val	Phe	Phe	Gln	Pro	Asp	Leu	Leu
		275					280					285			
Gln	Glu	Ile	Ser	Gly	Leu	Gln	Asn	Ser	Glu	Gly	Thr	Gln	Ser	Ile	Phe
	290					295					300				
Lys	Gly	Leu	Met	Met	Thr	Leu	Tyr	Gly	Gly	Thr	Ser	Leu	Gln	Thr	Ser
305					310					315					320
Asn	Glu	Ala	Leu	Thr	Glu	Leu	Val	Ala	Thr	Arg	Gly	Met	Ala	Gly	Met
			325					330						335	
Met	Asn	Thr	Val	Trp	Leu	Ile	Ile	Cys	Ala	Met	Cys	Phe	Gly	Gly	Ala
			340					345					350		
Met	Thr	Ala	Gly	Gly	Met	Leu	Gly	Ser	Ile	Thr	Ser	Val	Phe	Val	Arg
		355					360					365			
Phe	Met	Lys	Asn	Thr	Val	Ser	Met	Val	Ala	Ser	Thr	Val	Cys	Ser	Gly
	370					375					380				
Ile	Phe	Leu	Asn	Leu	Ala	Thr	Ala	Asp	Gln	Tyr	Ile	Ser	Ile	Ile	Leu
385					390					395					400
Thr	Gly	Asn	Met	Phe	Arg	Asp	Ile	Tyr	Glu	Lys	Lys	Gly	Tyr	Glu	Ser
			405						410					415	
Cys	Leu	Leu	Ser	Arg	Thr	Thr	Glu	Asp	Ser	Val	Thr	Val	Thr	Ser	Val
			420					425					430		
Leu	Ile	Pro	Trp	Asn	Thr	Cys	Gly	Met	Thr	Gln	Ala	Thr	Ile	Leu	Ser
		435					440					445			
Val	Pro	Thr	Leu	Val	Tyr	Leu	Pro	Tyr	Cys	Phe	Phe	Asn	Ile	Ile	Ser
	450					455				460					
Pro	Leu	Met	Ser	Ile	Thr	Ile	Ala	Ala	Ile	Gly	Tyr	Lys	Ile	Val	Arg
465					470					475					480
Arg	Lys														

<210> 9366

<211> 63

<212> PRT

<213> B.fragilis

<400> 9366

Pro	Ala	Ser	Ile	Cys	Gln	Ser	Asn	Arg	Arg	Tyr	Tyr	Tyr	Ile	Cys	Ile
1				5					10					15	
Ser	Ile	Gly	Ser	Leu	Gln	Ala	Arg	Ser	Ile	Ile	Tyr	Phe	Gln	Gly	Leu
			20					25					30		
Tyr	Ser	Gln	Arg	Tyr	Asn	Leu	Ser	Tyr	Lys	Glu	Phe	Thr	Ile	Cys	Thr
		35				40						45			
Leu	Lys	Phe	Met	Leu	Arg	Ile	Phe	Arg	Leu	Phe	Leu	Asn	Lys	Ile	
	50					55					60				

<210> 9367

<211> 394

<212> PRT

<213> B.fragilis

<400> 9367

Leu Cys Ala Met Lys Gln Ile Leu Lys Glu Asn Gly Gly Leu Pro Ala
 1 5 10 15
 Ser Ile Leu Trp Thr Leu Ala Ile Val Ala Gly Ile Ser Val Ala Asn
 20 25 30
 Leu Tyr Tyr Asn Gln Pro Leu Leu Asn Met Ile Arg His Glu Leu Gly
 35 40 45
 Val Ser Glu Phe Glu Thr Asn Leu Ile Ala Met Val Thr Gln Ile Gly
 50 55 60
 Tyr Ala Leu Gly Leu Leu Phe Ile Val Pro Leu Gly Asp Leu Tyr Gln
 65 70 75 80
 Arg Lys Arg Ile Ile Leu Thr Ser Phe Ser Ile Leu Ile Val Ser Leu
 85 90 95
 Leu Val Ile Ala Met Ala Pro Asn Ile His Val Ile Leu Cys Ala Ser
 100 105 110
 Leu Leu Thr Gly Ile Cys Ser Val Met Pro Gln Ile Phe Ile Pro Ile
 115 120 125
 Ala Ser Gln Phe Ser Arg Pro Glu Asn Lys Gly Arg Asn Val Gly Ile
 130 135 140
 Val Val Ser Gly Leu Leu Thr Gly Ile Leu Ala Ser Arg Val Val Ser
 145 150 155 160
 Gly Phe Ile Gly Glu Leu Phe Gly Trp Arg Glu Met Tyr Tyr Ile Ala
 165 170 175
 Ala Gly Met Met Leu Ile Cys Gly Met Val Val Met Arg Val Leu Pro
 180 185 190
 Asp Ile Arg Pro Asn Phe Gln Gly Lys Tyr Ser Asp Leu Met Lys Ser
 195 200 205
 Leu Leu Ser Leu Leu Lys Gln Tyr Pro Glu Leu Arg Ile Phe Ser Val
 210 215 220
 Arg Ala Ala Leu Ala Phe Gly Ser Phe Leu Ala Met Trp Ser Cys Leu
 225 230 235 240
 Ala Phe Lys Met Gly Ser Ala Pro Phe Tyr Ala Asp Ser His Ile Ile
 245 250 255
 Gly Met Leu Gly Leu Cys Gly Ile Ala Gly Ala Leu Ser Ala Ser Leu
 260 265 270
 Val Gly Lys Tyr Val Arg Lys Val Gly Val Arg Arg Phe Asn Phe Ile
 275 280 285
 Gly Cys Gly Leu Ile Leu Ser Ala Trp Leu Leu Leu Phe Ile Gly Glu
 290 295 300
 Asn Ser Tyr Trp Gly Ile Val Ala Gly Ile Ile Ile Ile Asp Ile Gly
 305 310 315 320
 Met Gln Cys Ile Gln Leu Ser Asn Gln Thr Arg Ile Phe Glu Leu Cys
 325 330 335
 Pro Ser Ala Ser Asn Arg Ile Asn Thr Ile Phe Met Thr Thr Tyr Phe
 340 345 350
 Ile Gly Ala Ser Thr Gly Thr Phe Leu Ala Gly Thr Phe Trp Gln Ala
 355 360 365
 Phe Gly Trp His Gly Val Ile Gly Thr Gly Val Ala Leu Thr Thr Gly
 370 375 380
 Ser Leu Leu Ile Thr Phe Phe Ser Lys Arg
 385 390

<210> 9368

<211> 1870

<212> PRT

<213> B.fragilis

<400> 9368

Thr	Lys	Arg	Leu	Phe	Ala	Met	Lys	Gly	Lys	Lys	Asn	Leu	Leu	Ile	Leu
1				5				10						15	
Phe	Ser	Cys	Val	Leu	Thr	Val	Ile	Ile	Ala	Gly	Leu	Phe	Ala	Cys	Thr
			20					25					30		
Arg	Ser	Ala	Lys	Glu	Ile	Ile	Pro	Ser	Ser	Glu	Tyr	Ala	Pro	Tyr	Val
		35					40					45			
Asn	Ala	Tyr	Thr	Gly	Gly	Val	Ile	Ser	Gln	Ser	Ser	Pro	Ile	Arg	Ile
	50					55					60				
Glu	Leu	Thr	Gln	Asp	Gln	Pro	Met	Val	Asp	Leu	Asn	Asn	Glu	Leu	Lys
65					70					75					80
Asp	Cys	Pro	Phe	Ser	Phe	Thr	Pro	Ser	Leu	Lys	Gly	Lys	Ala	Tyr	Trp
				85					90					95	
Val	Ser	Asn	Asn	Thr	Ile	Glu	Phe	Leu	Pro	Glu	Glu	Gly	Glu	Leu	Lys
			100					105					110		
Pro	Gly	Lys	Leu	Tyr	Gln	Gly	Ser	Phe	Gln	Leu	Gly	Asp	Phe	Val	Glu
	115						120					125			
Val	Asp	Ser	Lys	Leu	Lys	Val	Phe	Asp	Phe	Ser	Phe	Arg	Val	Gln	Glu
130						135					140				
Ser	Asn	Phe	Thr	Leu	His	Thr	Ala	Pro	Leu	Glu	Ile	Ala	Ser	Ser	Ser
145					150					155					160
Pro	Asp	Lys	Val	Thr	Val	Lys	Gly	Glu	Ile	Arg	Phe	Ser	Asp	Lys	Met
				165				170						175	
Thr	Lys	Glu	Gln	Val	Glu	Lys	Ile	Leu	Ser	Thr	Asn	Gly	Thr	Ser	Thr
			180					185					190		
Ile	Thr	Ile	Gly	Ser	Thr	Ser	Asn	Pro	Leu	Glu	Tyr	Ser	Phe	Ile	Ile
		195					200					205			
Ser	Asn	Ile	Gln	Arg	Lys	Glu	Gln	Asp	Tyr	Asp	Leu	Lys	Ile	Thr	Ala
210					215					220					
Asp	Gly	Glu	Pro	Val	Glu	Met	Asp	Arg	Lys	Gln	Ser	Glu	Ser	Ile	Thr
225					230					235				240	
Ile	Pro	Ala	Lys	Asp	Ser	Phe	Arg	Phe	Leu	Ser	Ala	Glu	Arg	Ile	Ser
				245				250						255	
Gln	Pro	Glu	Asn	Gly	Ile	Gln	Ile	Val	Phe	Ser	Asp	Pro	Val	Ser	Asp
			260					265					270		
Thr	Gln	Asp	Leu	Lys	Gly	Leu	Ile	Glu	Ile	Pro	Glu	Ile	Pro	Ser	Tyr
	275						280					285			
Ile	Phe	Gln	Ile	Thr	Asp	Asn	Lys	Val	Asn	Val	Tyr	Phe	Glu	Ala	Gly
290					295					300					
Gln	Leu	Ser	Lys	Leu	Thr	Leu	Lys	Ile	His	Glu	Gly	Val	Lys	Asn	Asn
305					310					315					320
Gln	Gly	Lys	Ala	Leu	Gly	Ser	Ser	His	Ser	Ile	Ser	Phe	Gly	Glu	Leu
				325				330					335		
Asn	Leu	Lys	Pro	Gln	Val	Glu	Ile	Ser	Ser	Ala	Gly	Ala	Ile	Ile	Pro
			340					345					350		
Asp	Ser	Lys	Asn	Leu	Val	Ile	Pro	Phe	Arg	Ala	Val	Ser	Leu	Tyr	Ala
	355						360					365			
Val	Asp	Leu	Arg	Val	Ile	Arg	Ile	Phe	Glu	Asn	Asn	Val	Leu	Met	Phe
370						375					380				
Met	Gln	Asn	Asn	Ser	Leu	Ser	Ser	Ala	Asn	Glu	Leu	Arg	Arg	Ser	Gly
385					390					395					400
Arg	Leu	Val	Tyr	Lys	Lys	Thr	Leu	Phe	Leu	Gly	Lys	Asp	Pro	Ser	Lys
				405				410						415	
Asp	Ile	His	Lys	Trp	Glu	Asn	Tyr	Ser	Ile	Asp	Leu	Ala	Gly	Leu	Ile
			420					425					430		
His	Gln	Glu	Pro	Gly	Ala	Ile	Tyr	Arg	Val	Ile	Leu	Ser	Phe	Lys	Gln
		435					440					445			
Glu	Tyr	Ser	Ala	Tyr	Pro	Cys	Gly	Ser	Gly	Glu	Asn	Pro	Lys	Met	Gln

450		455		460
Phe Ser Glu Glu Thr Glu Ser Leu Thr Lys Val Lys Ser Asp Ile Leu				
465		470		475
Ser Glu Glu Asp Glu Ala Val Trp Asp Lys Pro Glu Thr Tyr Tyr Tyr				480
	485		490	495
Phe Ser Gly Asn Glu Asn Ala Asp Trp Ser Gln Tyr Arg Trp Asp Glu				
	500		505	510
Arg Asp Asn Pro Cys His Pro Ser Tyr Tyr Met Thr Ser Asp Arg Ile				
	515		520	525
Ala Ala Cys Asn Val Leu Ala Ser Asn Ile Gly Met Ile Val Lys Arg				
	530		535	540
Asn Ser Met Asn Lys Leu Trp Ile Ala Val Ser Asn Ile Leu Asp Thr				
545		550		555
Lys Pro Val Glu Lys Ala Lys Val Ile Val Tyr Asn Phe Gln Leu Gln				560
	565		570	575
Pro Ile Gly Glu Ala Leu Thr Asp Ala Glu Gly Phe Ala Ile Ile Glu				
	580		585	590
Thr Lys Gly Thr Pro Phe Ile Val Val Ala Glu Ser Glu Lys Gln Lys				
	595		600	605
Ala Tyr Val Lys Val Ala Asp Gly Glu Glu Gln Ser Thr Thr Arg Phe				
610		615		620
Asp Val Gly Gly Lys Asp Ile Gln Lys Gly Leu Lys Gly Phe Val Tyr				
625		630		635
Gly Glu Arg Gly Val Trp Arg Pro Gly Asp Thr Leu His Ile Ser Phe				640
	645		650	655
Val Leu Glu Asp Arg Asn Lys Arg Ile Pro Asp Lys His Pro Val Thr				
	660		665	670
Leu Glu Leu Tyr Asn Pro Arg Gly Gln Phe Tyr Ser Lys Gln Ile Ser				
	675		680	685
Thr Asn Gly Leu Asn Gly Phe Tyr Thr Phe Lys Val Pro Thr Gln Pro				
690		695		700
Glu Asp Pro Thr Gly Leu Trp Asn Ala Tyr Val Lys Val Gly Gly Thr				
705		710		715
Ala Phe His Lys Ser Leu Arg Val Glu Thr Ile Lys Pro Asn Arg Leu				
	725		730	735
Lys Ile Asn Leu Lys Leu Pro Gly Glu Ile Leu Lys Ala Ala Asp Lys				
	740		745	750
Glu Val Gln Ala His Leu Ser Ser Ala Trp Leu Thr Gly Ala Thr Ala				
	755		760	765
Ser Arg Leu Lys Ala Lys Val Glu Met Ser Leu Ser Lys Val Asn Thr				
770		775		780
Gln Phe Lys Asn Tyr Glu Thr Tyr Ile Phe Asn Asn Pro Ala Thr Glu				
785		790		795
Phe Thr Ser Ile Arg Thr Asp Ile Phe Asn Gly Thr Leu Asp Glu Asn				
	805		810	815
Gly Asn Thr Gly Phe Met Leu Lys Leu Pro Thr Ser Glu Asn Ala Pro				
	820		825	830
Gly Met Leu Arg Ala Asn Ile Thr Thr Gln Val Phe Glu Pro Gly Gly				
	835		840	845
Asp Ala Ser Ile Gln Thr Leu Ser Val Pro Tyr Ser Pro Phe Pro Ser				
850		855		860
Tyr Val Gly Ile Asn Leu Asn Gln Pro Gln Gly Arg Tyr Ile Glu Thr				
865		870		875
Asp Lys Glu His Ile Phe Asp Ile Val Thr Val Asn Ser Asp Gly Lys				
	885		890	895
Pro Val Asn Arg Ser Gly Leu Glu Tyr Lys Ile Tyr Arg Ile Ser Trp				
	900		905	910
Ser Trp Trp Trp Glu Asn Asp Asn Glu Ser Phe Glu Thr Tyr Ile Asn				
	915		920	925

Ser Ser Ser Ile Thr Pro Val Ala Thr Gly Arg Leu Asn Thr Thr Gly
 930 935 940
 Gly Lys Gly Gln Phe Ser Phe Lys Val Asn Tyr Pro Asp Trp Gly Arg
 945 950 955 960
 Tyr Leu Val Tyr Val Lys Asp Arg Glu Ser Gly His Ala Thr Gly Gly
 965 970 975
 Thr Ile Tyr Val Asp Trp Pro Asp Trp Arg Gly Arg Ser Asn Lys Ser
 980 985 990
 Asp Pro Ser Gly Ile Lys Met Leu Ser Phe Ser Ile Asp Lys Asp Ser
 995 1000 1005
 Tyr Glu Pro Gly Glu Thr Val Thr Ala Ile Leu Pro Ala Ser Ala Gly
 1010 1015 1020
 Gly Arg Ala Leu Val Thr Leu Glu Asn Gly Ser Ser Val Ile Gln Arg
 1025 1030 1035 1040
 Glu Trp Ile Glu Val Ser Gly Lys Glu Asp Thr Lys Tyr Gln Phe Lys
 1045 1050 1055
 Val Thr Pro Glu Met Ala Pro Asn Val Tyr Leu His Ile Ser Leu Leu
 1060 1065 1070
 Gln Pro His Ala Gln Thr Val Asn Asp Leu Pro Ile Arg Met Tyr Gly
 1075 1080 1085
 Ile Met Pro Val Phe Val Thr Asp Lys Gln Thr Val Leu Glu Pro Gln
 1090 1095 1100
 Ile Lys Met Pro Glu Val Leu Arg Pro Glu Gln Val Phe Asn Leu Thr
 1105 1110 1115 1120
 Ile Asn Glu Lys His Gly Arg Pro Met Thr Tyr Thr Leu Ala Ile Val
 1125 1130 1135
 Asp Asp Gly Leu Leu Asp Leu Thr Asn Phe Lys Thr Pro Asp Pro Trp
 1140 1145 1150
 Asn Asn Phe Tyr Ala Arg Glu Ala Leu Gly Ile Arg Thr Trp Asp Met
 1155 1160 1165
 Tyr Asp Asp Val Leu Gly Ala Thr Ala Gly Ser Tyr Gly Ser Met Phe
 1170 1175 1180
 Ser Thr Gly Gly Asp Glu Thr Leu Lys Pro Ser Asp Gln Lys Ala Asn
 1185 1190 1195 1200
 Arg Phe Lys Pro Val Val Lys Phe Ile Gly Pro Phe Ser Ile Gly Lys
 1205 1210 1215
 Gly Lys Ser Arg Thr His Gln Ile Thr Leu Pro Met Tyr Val Gly Ser
 1220 1225 1230
 Val Arg Ala Met Ile Val Ala Gly Gln Asp Gly Ala Tyr Gly Asn Ala
 1235 1240 1245
 Glu Lys Thr Val Pro Val Arg Thr Pro Leu Met Ile Leu Ser Thr Leu
 1250 1255 1260
 Pro Arg Val Leu Ser Thr Asn Glu Glu Ile Glu Val Pro Val Asn Val
 1265 1270 1275 1280
 Phe Ala Leu Glu Asn Asn Val Lys Asn Val Asn Val Ser Ile Gln Ala
 1285 1290 1295
 Ser Gly Ala Gly Ile Gln Val Thr Gly Asn Lys Gln Gln Thr Leu Thr
 1300 1305 1310
 Phe Thr Gln Thr Gly Asp Arg Leu Ile Phe Phe Lys Leu Lys Thr Gly
 1315 1320 1325
 Thr Lys Thr Gly Lys Ala Thr Ile His Leu Thr Ala Asn Gly Asn Gly
 1330 1335 1340
 Gln Asn Thr Lys Glu Thr Ile Glu Ile Glu Val Arg Asn Pro Asn Pro
 1345 1350 1355 1360
 Val Val Thr Leu Arg Ser Gln Trp Val Glu Thr Gly Lys Ser Glu
 1365 1370 1375
 Glu Leu Asn Tyr Gln Leu Ser Ser Gly Ser Glu Gly Asn Ser Ile Gln
 1380 1385 1390
 Leu Glu Val Ser Arg Ile Pro Ser Val Asp Ile Ser Arg Arg Phe Asp

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 1375
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 1385
 1390

1395 1400 1405
 Phe Leu Tyr Asn Tyr Gln His Asn Cys Thr Glu Gln Leu Thr Ser Lys
 1410 1415 1420
 Ala Leu Pro Leu Leu Phe Ile Ser Gln Phe Lys Thr Val Asp Asn Glu
 1425 1430 1435 1440
 Glu Leu Glu Lys Ile Lys Val Asn Val Gln Glu Ala Ile Arg Gln Leu
 1445 1450 1455
 Tyr Gly Arg Gln Leu Pro Asn Gly Gly Phe Val Tyr Trp Pro Gly Asn
 1460 1465 1470
 Ala Ser Ala Asp Glu Trp Ile Thr Ser Tyr Ala Gly Met Phe Leu Ile
 1475 1480 1485
 Leu Ala Gln Glu Lys Gly Tyr Ala Val Asn Ser Asn Val Leu Asn Lys
 1490 1495 1500
 Trp Lys Arg Phe Gln Arg Ala Ala Ala Gln Asn Trp Gln Pro Val Ala
 1505 1510 1515 1520
 Gln Glu Gln Ser Trp Trp Tyr Trp Gln Ala Asp Phe Gln Gln Ala Phe
 1525 1530 1535
 Arg Leu Tyr Thr Leu Ala Met Ala Gly Ala Pro Glu His Gly Ala Met
 1540 1545 1550
 Asn Arg Met Lys Glu Leu Pro Thr Leu Ser Gln Gln Ala Lys Trp Arg
 1555 1560 1565
 Leu Ala Ala Ala Tyr Ala Leu Asn Gly Lys Glu Lys Ala Ala Gly Glu
 1570 1575 1580
 Leu Val Phe Ser Ala Lys Thr Thr Val Glu Pro Tyr Ser Ser Asn Asn
 1585 1590 1595 1600
 Tyr Val Tyr Gly Ser Ser Asp Arg Asp Glu Ala Met Ile Leu Glu Thr
 1605 1610 1615
 Leu Leu Leu Met Asn Arg Gln Arg Glu Ala Met Glu Gln Ala Lys Ile
 1620 1625 1630
 Val Ser His Asn Leu Thr Arg Glu Thr Trp Phe Ser Thr Gln Ser Thr
 1635 1640 1645
 Ala Phe Ser Leu Met Ala Met Gly Arg Leu Ala Glu Lys Leu Ser Gly
 1650 1655 1660
 Thr Leu Asp Phe Ser Trp Thr Leu Asn Gly Lys Gln Gln Pro Ala Val
 1665 1670 1675 1680
 Lys Ser Ala Lys Ala Val Tyr Glu Thr Pro Ile Ser Thr Ser Ser Arg
 1685 1690 1695
 Glu Gly Lys Val Ile Leu Lys Asn Asn Gly Lys Gly Ala Leu Asn Ala
 1700 1705 1710
 Asp Leu Ile Thr Arg Thr Gln Leu Leu Asn Asp Thr Leu Pro Pro Ile
 1715 1720 1725
 Ala Asn Asn Leu Arg Ile Ser Val Lys Tyr Val Asp Asn Asn Gly Ser
 1730 1735 1740
 Pro Ile Asp Thr His Ser Leu His Gln Gly Thr Asp Phe Met Ala Val
 1745 1750 1755 1760
 Val Thr Val Ala Asn Thr Ser Gly Thr Thr Asp Tyr Thr Asn Leu Ala
 1765 1770 1775
 Leu Thr His Ile Ile Pro Ala Gly Trp Glu Ile Phe Asn Glu Arg Met
 1780 1785 1790
 Thr Gly Gln Ile Ser Thr Ser Ala Pro Tyr Ser Tyr Gln Asp Ile Arg
 1795 1800 1805
 Asp Asp Arg Ile Leu Thr Tyr Phe Asn Leu Gln Gln Gly Gln Ala Lys
 1810 1815 1820
 Thr Phe Thr Val Arg Leu Gln Ala Thr Tyr Ser Gly Asp Phe Val Met
 1825 1830 1835 1840
 Pro Ala Ile Gln Cys Glu Ala Met Tyr Asp Ala Asn Val Gln Ala Arg
 1845 1850 1855
 Thr Gln Ala Gly Arg Thr Lys Val Val Arg Gln Ser Ile Glu
 1860 1865 1870

1395 1400 1405
 1410 1415 1420
 1425 1430 1435 1440
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 1460 1465 1470
 1475 1480 1485
 1490 1495 1500
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 1825 1830 1835 1840
 1845 1850 1855
 1860 1865 1870

<210> 9369
 <211> 161
 <212> PRT
 <213> B.fragilis

<400> 9369

Tyr Leu Val Ser Glu Glu Cys Ser Ser Phe Phe Tyr Leu His Asn Ser
 1 5 10 15
 Asp Phe Asn Met Phe Gly Lys Lys Lys Asn Glu Asp Tyr Ser Val Lys
 20 25 30
 Thr Val Lys Val Gly Val Asp Lys Leu Thr Thr Ile Ala Leu Gly Thr
 35 40 45
 Met Val Lys Gly Thr Ile Thr Val Glu Gly Asp Leu Arg Leu Asp Gly
 50 55 60
 Ile Ile Glu Gly Asn Val Ser Cys Arg Gly Lys Val Val Ile Gly Pro
 65 70 75 80
 Gln Gly Arg Ile Lys Gly Asn Val Thr Cys Thr Gly Ala Val Leu His
 85 90 95
 Gly Met Leu Gln Gly Asp Ile Gln Val Ala Glu Asp Leu Ile Met Lys
 100 105 110
 Ser Gly Cys Thr Met Asn Gly Asp Val Tyr Thr Cys Lys Leu Glu Ile
 115 120 125
 Glu Ser Lys Ala Arg Phe Asn Gly Thr Cys Asn Thr Thr Glu Lys Asp
 130 135 140
 Thr Leu Val Thr Ser Gln Val Val Lys Pro Glu Thr Val Asp Thr Glu
 145 150 155 160
 Lys

<210> 9370
 <211> 421
 <212> PRT
 <213> B.fragilis

<400> 9370

Ser Glu Leu Phe Met Arg Lys Lys Ser Met Phe Leu Trp Ser Leu Leu
 1 5 10 15
 Ala Ala Met Thr Met Ser Ala Cys Ser Glu His Asn Glu Leu Pro Ser
 20 25 30
 Gly Glu Val Pro Gly Gly Asn Ser Lys Ala Asn Phe Ile Val Lys Leu
 35 40 45
 Asn Phe Glu Gly Thr Ser Met Glu Gln Gly Gly Lys Thr Arg Ala Ala
 50 55 60
 Gln Ser Thr Ala Val Pro Glu Thr Ser Trp Ser Asn Ile Arg Gln Val
 65 70 75 80
 Gln Ile Leu Leu Tyr Asp Ala Ser Asn Ile Val Arg Phe Ser Asp Val
 85 90 95
 Val Thr Pro Thr Ala Gly Asn Thr Thr Phe Thr Tyr Thr Asp Val Pro
 100 105 110
 Ala Gly Thr Tyr Thr Met Val Ala Ile Ala Asn Ala Lys Ser Ser Ala
 115 120 125
 Asp Ala Ile Asn Thr Tyr Leu Asp Gly Gly Thr Thr Pro Val Glu Trp
 130 135 140
 Gly Met Trp Asn Val Arg Gln Lys Gln Val Gln Asn Met Val Met Lys
 145 150 155 160
 Tyr Lys Thr Gly Thr Phe Pro Ala Phe Cys Ser Ala Ala Leu Ala Gly
 165 170 175
 Asn Thr Ala Tyr Thr Glu Pro Ala Glu Ile Phe Met Gly Ala Val Ser

[illegible]

Case	Age	Sex	Site	Pathologic Findings	Immunohistochemical Findings	Outcome
1	65	M	Rectum	Adenocarcinoma	CD44 ⁺ , CD47 ⁺ , CD133 ⁺	Survived 12 months
2	68	F	Rectum	Adenocarcinoma	CD44 ⁺ , CD47 ⁺ , CD133 ⁺	Survived 18 months
3	72	M	Rectum	Adenocarcinoma	CD44 ⁺ , CD47 ⁺ , CD133 ⁺	Survived 24 months
4	75	F	Rectum	Adenocarcinoma	CD44 ⁺ , CD47 ⁺ , CD133 ⁺	Survived 30 months
5	78	M	Rectum	Adenocarcinoma	CD44 ⁺ , CD47 ⁺ , CD133 ⁺	Survived 36 months
6	80	F	Rectum	Adenocarcinoma	CD44 ⁺ , CD47 ⁺ , CD133 ⁺	Survived 42 months
7	82	M	Rectum	Adenocarcinoma	CD44 ⁺ , CD47 ⁺ , CD133 ⁺	Survived 48 months
8	85	F	Rectum	Adenocarcinoma	CD44 ⁺ , CD47 ⁺ , CD133 ⁺	Survived 54 months
9	88	M	Rectum	Adenocarcinoma	CD44 ⁺ , CD47 ⁺ , CD133 ⁺	Survived 60 months
10	90	F	Rectum	Adenocarcinoma	CD44 ⁺ , CD47 ⁺ , CD133 ⁺	Survived 66 months

177
178

11. $\frac{1}{2} \ln 2$

165 170 175
 Gly Glu Asp Gln Glu Pro Met Ile Glu Gln Ala Arg Glu Ile Val Arg
 180 185 190
 Arg Phe Asn Tyr Ile Tyr Gly Glu Thr Leu Val Glu Pro Glu Ile Leu
 195 200 205
 Leu Pro Asp Asn Ala Ala Cys Leu Arg Leu Pro Gly Thr Asp Gly Lys
 210 215 220
 Ala Lys Met Ser Lys Ser Leu Gly Asn Cys Ile Tyr Leu Ala Glu Glu
 225 230 235 240
 Ala Asp Glu Ile Gln Lys Lys Val Met Ser Met Phe Thr Asp Pro Asp
 245 250 255
 His Leu Arg Val Gln Asp Pro Gly Lys Ile Glu Gly Asn Thr Val Phe
 260 265 270
 Thr Tyr Leu Asp Ala Phe Cys Arg Pro Glu His Phe Glu Arg Tyr Leu
 275 280 285
 Pro Asp Tyr Pro Asn Leu Asn Glu Leu Lys Ala His Tyr Gln Arg Gly
 290 295 300
 Gly Leu Gly Asp Val Lys Val Lys Arg Phe Leu Asn Ser Ile Met Gln
 305 310 315 320
 Glu Glu Leu Glu Pro Ile Arg Asn Arg Arg Lys Glu Phe Glu Lys Asp
 325 330 335
 Ile Pro Ala Ile Tyr Glu Met Leu Arg Lys Gly Cys Glu Val Ala Arg
 340 345 350
 Ala Ala Ala Asp Thr Leu Ser Asp Val Arg Lys Ala Met Lys Ile
 355 360 365
 Asn Tyr Phe Asp Asp Ala Glu Leu Ile Asn Glu Gln Val Lys Arg Phe
 370 375 380
 Asn Lys
 385

<210> 9372

<211> 399

<212> PRT

<213> B.fragilis

<400> 9372

Leu Leu Arg Tyr Met Lys Lys Ile Leu Met Leu Leu Ala Leu Ala Gly
 1 5 10 15
 Val Thr Ser Val Ala Ser Ala Gln Gln Thr Thr Ile Thr Gly Tyr Glu
 20 25 30
 Val Ile Gln Val Gln Asp Lys Tyr Gln Val Ile Thr Asn Pro Phe Trp
 35 40 45
 Asp Asn Trp Phe Phe Ser Ile Gly Gly Gly Ala Glu Ala Leu Phe Gly
 50 55 60
 Asp Asn Asp His Val Gly Lys Phe Arg Asp Arg Ile Ser Pro Thr Leu
 65 70 75 80
 Asn Val Ala Val Gly Lys Trp Phe Thr Pro Gly Leu Gly Leu Arg Leu
 85 90 95
 Gln Tyr Ser Gly Leu Gln Gly Arg Gly Phe Ala Gly Ser Glu Thr Ala
 100 105 110
 Asp Phe Val Lys Ser Gly Lys Leu Ala Asn Gly Tyr Tyr Lys Gln Lys
 115 120 125
 Phe Asn Tyr Met Asn Leu His Gly Asp Val Met Phe Asn Leu Asn Ala
 130 135 140
 Leu Phe Gly Gly Tyr Asn Ser His Arg Val Tyr Glu Ile Ile Pro Tyr
 145 150 155 160
 Leu Gly Ala Gly Phe Thr His Ser Tyr Ser Lys Pro His Arg Glu Ala
 165 170 175
 Phe Ala Met Asn Ala Gly Ile Ile Asn Arg Phe Arg Val Ser Ser Ala

180	185	190
Val Asp Ile Asn Ile Glu Ile Gly	Gly Met Leu Ala Glu Asp Lys Phe	
195	200	205
Asp Gly Glu Ile Gly Gly Lys His Gly Tyr Asp Gly	Val Ala Ser Leu	
210	215	220
Thr Ala Gly Leu Thr Tyr Arg Phe Pro Ala Arg Gly	Phe Ala Arg Pro	
225	230	235
Met Pro Gln Ile Ile Ser Glu Ile Glu Leu Ala Asn Met Arg Arg Gln		
245	250	255
Met Asn Asp Met Ala Ala Ala Asn Gln Ser Leu Gln Gln Gln Leu Val		
260	265	270
Asp Ala Gln Asn Gln Pro Val Ala Glu Val Ala Glu Gln Val Val Val		
275	280	285
Thr Asp Ala Asn Ile Ala Pro Arg Thr Val Phe Phe Thr Ile Gly Ser		
290	295	300
Ser Glu Leu Ser Pro Arg Glu Glu Met Asn Leu Ser Tyr Leu Ala Ala		
305	310	315
Lys Met Lys Glu Phe Pro Asp Thr Gln Tyr Thr Val Tyr Gly Tyr Ala		
325	330	335
Asp Ser Ala Thr Gly Thr Pro Ala Phe Asn Lys Glu Leu Ser Gln Lys		
340	345	350
Arg Ala Gln Ala Val Val Asn Ala Leu Val Lys Lys Tyr Gly Val Asp		
355	360	365
Ser Ser Arg Leu Lys Val Asp Ala Gly Gly Gly Val Asp Lys Phe Gly		
370	375	380
Lys Pro Ile Tyr Leu Asn Arg Val Val Leu Val Glu Ser Val Lys		
385	390	395

<210> 9373
 <211> 62
 <212> PRT
 <213> B.fragilis

<400> 9373
Val Asn Tyr Lys Thr Gly Arg Lys Lys Asp Gly Lys Met Ile Val Tyr
1 5 10 15
Asn His Lys Lys Gly Glu Lys Pro Phe Ile Gly Phe Ser Pro Leu Ser
20 25 30
Tyr Tyr Leu Ile Val Ala Asn Arg Ile Ile Tyr Ile Pro Ala Ser Ser
35 40 45
Leu Ser Glu Tyr Leu Pro Val Ser Asp Arg Arg Met Pro Arg
50 55 60

<210> 9374
 <211> 304
 <212> PRT
 <213> B.fragilis

<400> 9374
Asn Met Arg Lys Asn Arg Leu Leu Ile Val Leu Phe Thr Gly Val Ala
1 5 10 15
Val Leu Leu Ser Leu Ala Ser Cys Thr Tyr Asp Tyr Phe Glu Asp Glu
20 25 30
Thr Asn Tyr Gln Val Phe Val Pro Glu Val Leu Asn Lys Thr Val Ser
35 40 45
Asp Cys Arg Val Leu Val Tyr Asn Asp Ala Gly Thr Leu Val Gly Ala
50 55 60
Arg Tyr Ala Thr Ser Pro Trp Asp Lys Asp Pro Arg Met Glu Ala Gly
65 70 75 80

Leu Phe Ser Phe Arg Leu Thr Pro Gly Glu Tyr Lys Val Tyr Cys Tyr
 85 90 95
 Thr Asn Thr Asp Ser Leu Thr Phe Val Asp Gly Gln His Leu Asp Ala
 100 105 110
 Ser Ala Phe Ile Leu Lys Ser Ser Ser Thr Gly Pro Asn Arg Tyr Val
 115 120 125
 Gln Leu Ser Asp Ile Leu Phe Gln Lys Phe Val Pro Ala Ile Val His
 130 135 140
 Pro Gly Ile Leu Gln Thr Asp Thr Ala Ala Leu Glu Arg Tyr Thr Gly
 145 150 155 160
 Arg Ile Thr Val Arg Phe Lys Lys Phe Pro Gly Asp Val Ser His Ile
 165 170 175
 Lys Lys Val Gln Leu Leu Ala Glu Gly Ala Pro Val Met Gln Tyr Leu
 180 185 190
 Lys Asn Asp Thr Leu Thr Gly Arg Leu Thr Pro Glu Asp Lys Met Phe
 195 200 205
 His Phe Gly Thr Leu Pro Val Gln Glu Lys Ala Asp Val Leu Glu Val
 210 215 220
 Asp His Arg Phe Ile Pro Ser Val Glu Asn Glu Pro Met Arg Leu Asn
 225 230 235 240
 Tyr Thr Phe Leu Asp Glu Asn Gly Ala Val Val Asn His Leu Pro Val
 245 250 255
 Glu Val Thr Glu Arg Glu Thr Gly Leu Pro Leu Arg Leu Leu His Gly
 260 265 270
 Lys Arg Ile Ile Ile Glu Ile Glu Ser Tyr Thr Val Ile Lys Ile Ser
 275 280 285
 Val Val Gly Trp Asn Glu Asp Ile Glu Ser Gly Asp Thr Asp Met Glu
 290 295 300

<210> 9375

<211> 529

<212> PRT

<213> B.fragilis

<400> 9375

Lys Val Ala Glu Met Arg Lys Lys Lys Ile Gln Ile Leu Leu Ser Ala
 1 5 10 15
 Ala Ala Phe Leu Phe Leu Met Gly Gly Thr Met Pro Ser Val Ala Gln
 20 25 30
 Glu Arg Lys Ile Gly Arg Val Glu Arg Arg Ala Asp Arg Asn Phe Ile
 35 40 45
 Arg Gln Lys Phe Asp Lys Ala Met Ala Gln Tyr Glu Thr Ala Ile Arg
 50 55 60
 Arg Glu Lys Asp Glu Ala Gly Gln Ala Ala Leu His Leu Lys Thr Ala
 65 70 75 80
 Arg Leu Tyr Phe Met Val Arg Glu Tyr Gly Arg Ala Ser Glu His Tyr
 85 90 95
 Asp Lys Ala Met Ser Leu Arg Pro Asp Leu Leu Gly Val Asp Asp Val
 100 105 110
 Cys Asp Tyr Val Asp Ala Leu Arg Phe Gln Gly Gln Ala Arg Lys Ala
 115 120 125
 Glu Ala Ile Cys Leu Asp Asn Ala Tyr Lys Asp Ile Tyr Ser Arg Tyr
 130 135 140
 Gln Arg Tyr Gln Asn Thr Leu Gln Ala Leu Ala Met Arg His Ser Val
 145 150 155 160
 Gln Glu Asp Pro Gly Phe Ser Ala Lys Arg Leu Leu Leu Asn Thr Ser
 165 170 175
 Asn Ala Glu Phe Trp Val Gly Asn Tyr Gly Glu Gln Pro Phe Tyr Ala
 180 185 190

Ile Ser Tyr Ser Lys Phe Asn Asp Pro Gly Lys Leu Phe Phe His Arg
 195 200 205
 Thr His Tyr Tyr Ala Leu Asp Glu Pro Gly Glu Thr Gly Val Glu Thr
 210 215 220
 Gln Lys Pro Pro Arg Tyr Tyr Gly Tyr Phe Arg Lys Ile Pro Ala Asp
 225 230 235 240
 Leu Gln Asn Gly Pro Val Thr Phe Ser Pro Asp Met Lys Ser Met Val
 245 250 255
 Ala Thr Val Ile Glu Tyr Asp Lys Glu Lys Thr Thr Val Glu Met Ala
 260 265 270
 Asn Arg Lys Leu Arg Pro Phe Arg Thr Lys Leu Phe Tyr Ser Val Leu
 275 280 285
 Lys Asn Lys Lys Lys Arg Phe Thr Lys Tyr Val Pro Ala Phe Pro Gln
 290 295 300
 Glu Glu Met Ser Ser Tyr Ala His Pro Tyr Leu Phe Asn Glu Gly Lys
 305 310 315 320
 Ser Leu Leu Phe Thr Ser Asp Met Pro Gly Gly Tyr Gly Gly Phe Asp
 325 330 335
 Leu Tyr Val Val His Trp Asp Glu Glu Ala Gln Ala Trp Gly Thr Pro
 340 345 350
 Val Asn Leu Gly Pro Asp Val Asn Thr Glu Gly Asp Glu Ile Phe Pro
 355 360 365
 Val Ile Tyr Lys Gly Arg Leu Ile Phe Ser Ser Asn Gly Leu Pro Gly
 370 375 380
 Phe Gly Gly Tyr Asp Leu Phe Ser Ala Tyr Tyr Asp Lys Asp Gly Val
 385 390 395 400
 Ile Pro Gly Ser Ile Ser His Phe Pro Tyr Pro Val Asn Ser Val Phe
 405 410 415
 Asn Asp Tyr Tyr Met Cys Pro Leu Asp Leu Arg Thr Ala Tyr Phe Val
 420 425 430
 Ser Asp Arg Glu Met Ala Ser Arg Asp Asp Ile Tyr Tyr Leu Arg Thr
 435 440 445
 Val Glu Asp Leu Gly Thr Gln Gln Gly Met Pro Phe Tyr Gly Met Ser
 450 455 460
 Glu Glu Asn Ala Ile Leu Gly Gly Ala Leu Leu Leu Asn Gly Thr Thr
 465 470 475 480
 Glu Thr Val Ser Pro Glu Ser Val Thr Leu Lys Gln Tyr Ala Pro Glu
 485 490 495
 Gly Leu Leu Met Thr Leu Tyr Phe Asp Phe Asp Ser Asp Glu Leu Thr
 500 505 510
 Asp Glu Cys Leu His His Gly Ala Gly Arg Ile Asp Gly Cys Ser Ala
 515 520 525
 Ile

<210> 9376

<211> 332

<212> PRT

<213> B.fragilis

<400> 9376

Ala Lys Ala Cys Asp Asn Leu Ile Cys Asn Leu Asn Arg Leu Lys Met
 1 5 10 15
 Lys Lys Glu Leu Leu Thr Arg Phe Met Glu Lys Arg Ile Val Glu Leu
 20 25 30
 Lys Lys Glu Gln Arg Asn Gly Thr Ala His Val Tyr Gln Ser Thr Leu
 35 40 45
 Asn Arg Leu Lys Asn Phe Met Asn Gly Arg Glu Ile Thr Phe Ser Gln
 50 55 60

Leu Thr Pro Glu Trp Leu Ala Leu Phe Glu Gln Lys Leu Leu Ala Asp
 65 70 75 80
 Gln Leu Lys Trp Asn Thr Ile Ser Thr Tyr Met Arg Met Leu Arg Ser
 85 90 95
 Val Tyr Asn Gln Ala Leu Glu Arg Gly Val Ala Thr Tyr Val Pro Arg
 100 105 110
 Leu Phe Asn Lys Val His Thr Gly Ile Asp Cys Pro Val Lys Arg Ala
 115 120 125
 Val Ser Pro Glu Val Ile Cys Arg Leu Met Thr Asp Arg Lys Pro Leu
 130 135 140
 Pro Gly Lys Leu Ala Phe Ser Arg Asp Leu Phe Val Leu Leu Phe Leu
 145 150 155 160
 Leu Arg Gly Met Pro Phe Val Asp Leu Ala Phe Leu Arg Arg Cys Asp
 165 170 175
 Leu Gln Gly Asn Val Ile Thr Tyr His Arg Arg Lys Thr Ser Arg Lys
 180 185 190
 Leu Thr Val Val Val Gly Lys Glu Ala Met Glu Ile Ile Gln Lys Tyr
 195 200 205
 Met Tyr Ala Ile Pro Asp Ser Pro Tyr Leu Phe Pro Ile Ile Gln Asn
 210 215 220
 Pro Gly Lys Asp Glu Tyr Gly Gln Tyr Ala Arg Met Leu Arg Leu Gln
 225 230 235 240
 Asn Tyr Arg Leu Thr Gln Val Ala Asn Ile Leu Gly Ile Arg Asp Arg
 245 250 255
 Leu Ser Thr Tyr Thr Ala Arg His Thr Trp Ala Thr Thr Ala Leu Arg
 260 265 270
 Gln Asn Tyr Asn Ser Ser Leu Ile Cys Asp Ala Met Gly His Ser Ser
 275 280 285
 Val Lys Val Thr Glu Thr Tyr Phe Gln Pro Tyr Arg Asp Asp Glu Val
 290 295 300
 Asn Arg Met Asn Ser Ser Leu Ile Thr Tyr Ile Leu Ser Lys Lys Lys
 305 310 315 320
 Arg Gly Thr Asp Lys Lys Asn Lys Lys Leu Ile Ala
 325 330

<210> 9377

<211> 202

<212> PRT

<213> B.fragilis

<400> 9377

Lys Arg Ile Arg Met Lys Ser Val Ile Arg His Ile Leu Ser Val Ala
 1 5 10 15
 Val Leu Phe Cys Leu Ile Ser Gly Val Gln Ala Gln Ser Val Lys Val
 20 25 30
 Asn Ile Pro Phe Trp Leu Thr Gly Ser Pro Asn Val Gly Phe Glu Tyr
 35 40 45
 Thr Leu Thr Arg Gln Leu Thr Val Asn Gly Glu Val Leu Trp Met Pro
 50 55 60
 Tyr Leu Phe Lys Lys His Glu Glu Val Phe Arg Ala Leu Gln Ser Ser
 65 70 75 80
 Val Glu Leu Arg Tyr Val Asn Pro Arg Asn Phe Tyr Thr Asn Asp
 85 90 95
 Ser Trp Asp Gly Phe Tyr Ile Gly Pro Tyr Ala Met Tyr Gly Asn Phe
 100 105 110
 Asn Ile Gly Leu Leu Lys His Asn Asp Pro Leu Gln Ser Tyr Arg Arg
 115 120 125
 Lys Gly Trp Gly Val Ser Gly Gly Ile Ser Thr Gly Tyr Lys Phe Ala
 130 135 140

Phe Asn Ser Arg Trp Gly Leu Asp Leu Asn Ile Gly Leu Gly Tyr Ala
 145 150 155 160
 His Leu Gln Tyr Asn Lys Tyr Tyr Leu Gly Gly Glu Tyr Val Asn Phe
 165 170 175
 Pro Leu Glu Arg Lys Lys Thr Lys Arg Trp Ile Gly Pro Thr Lys Phe
 180 185 190
 Gly Ile Asn Leu Thr Tyr Asn Ile Phe Arg
 195 200

<210> 9378
 <211> 1081
 <212> PRT
 <213> B.fragilis

<400> 9378
 Gln Leu Ile Met Thr Ile Lys Glu Met Glu Lys Glu Met Lys Lys Val
 1 5 10 15
 Leu Val Leu Gly Ser Gly Ala Leu Lys Ile Gly Gln Ala Gly Glu Phe
 20 25 30
 Asp Tyr Ser Gly Ser Gln Ala Leu Lys Ala Leu Lys Glu Glu Gly Ile
 35 40 45
 Asn Ser Val Leu Val Asn Pro Asn Ile Ala Thr Ile Gln Thr Ser Glu
 50 55 60
 Gly Ile Ala Asp Lys Val Tyr Phe Leu Pro Val Thr Thr Tyr Phe Val
 65 70 75 80
 Glu Glu Ile Ile Lys Lys Glu Arg Pro Asp Gly Ile Leu Leu Ala Phe
 85 90 95
 Gly Gly Gln Thr Ala Leu Asn Cys Gly Ala Glu Leu Tyr Thr Lys Gly
 100 105 110
 Ile Leu Asp Lys Tyr Gly Val Lys Val Leu Gly Thr Ser Val Glu Ala
 115 120 125
 Ile Met Tyr Thr Glu Asp Arg Asp Leu Phe Val Lys Lys Leu Asp Glu
 130 135 140
 Ile Glu Met Lys Thr Pro Ile Ser Gln Ala Val Glu Ser Met Glu Asp
 145 150 155 160
 Ala Ile Ala Ala Ala Arg Arg Ile Gly Tyr Pro Val Met Val Arg Ser
 165 170 175
 Ala Tyr Ala Leu Gly Gly Leu Gly Ser Gly Ile Cys Ala Asn Glu Glu
 180 185 190
 Glu Phe Leu Lys Leu Ala Glu Ser Phe Ala Phe Ser Lys Gln Ile
 195 200 205
 Leu Val Glu Glu Ser Leu Lys Gly Trp Lys Glu Ile Glu Phe Glu Val
 210 215 220
 Ile Arg Asp Ala Asn Asp His Cys Phe Thr Val Ala Ser Met Glu Asn
 225 230 235 240
 Phe Asp Pro Leu Gly Ile His Thr Gly Glu Ser Ile Val Val Ala Pro
 245 250 255
 Thr Cys Ser Leu Asp Asp Lys Glu Leu Lys Met Leu Gln Glu Leu Ser
 260 265 270
 Thr Lys Cys Ile Arg His Leu Gly Ile Val Gly Glu Cys Asn Ile Gln
 275 280 285
 Tyr Ala Phe Asn Ser Asp Thr Asp Asp Tyr Arg Val Ile Glu Val Asn
 290 295 300
 Ala Arg Leu Ser Arg Ser Ser Ala Leu Ala Ser Lys Ala Thr Gly Tyr
 305 310 315 320
 Pro Leu Ala Phe Val Ala Ala Lys Val Ala Leu Gly Tyr Thr Leu Asp
 325 330 335
 Gln Ile Gly Glu Met Gly Thr Pro Asn Ser Ala Tyr Val Ala Pro Gln
 340 345 350

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100 101 102 103 104 105 106 107 108 109 110 111 112 113 114 115 116 117 118 119 120 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140 141 142 143 144 145 146 147 148 149 150 151 152 153 154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184 185 186 187 188 189 190 191 192 193 194 195 196 197 198 199 200 201 202 203 204 205 206 207 208 209 210 211 212 213 214 215 216 217 218 219 220 221 222 223 224 225 226 227 228 229 230 231 232 233 234 235 236 237 238 239 240 241 242 243 244 245 246 247 248 249 250 251 252 253 254 255 256 257 258 259 260 261 262 263 264 265 266 267 268 269 270 271 272 273 274 275 276 277 278 279 280 281 282 283 284 285 286 287 288 289 290 291 292 293 294 295 296 297 298 299 300 301 302 303 304 305 306 307 308 309 310 311 312 313 314 315 316 317 318 319 320 321 322 323 324 325 326 327 328 329 330 331 332 333 334 335 336 337 338 339 340 341 342 343 344 345 346 347 348 349 350 351 352 353 354 355 356 357 358 359 360 361 362 363 364 365 366 367 368 369 370 371 372 373 374 375 376 377 378 379 380 381 382 383 384 385 386 387 388 389 390 391 392 393 394 395 396 397 398 399 400 401 402 403 404 405 406 407 408 409 410 411 412 413 414 415 416 417 418 419 420 421 422 423 424 425 426 427 428 429 430 431 432 433 434 435 436 437 438 439 440 441 442 443 444 445 446 447 448 449 450 451 452 453 454 455 456 457 458 459 460 461 462 463 464 465 466 467 468 469 470 471 472 473 474 475 476 477 478 479 480 481 482 483 484 485 486 487 488 489 490 491 492 493 494 495 496 497 498 499 500 501 502 503 504 505 506 507 508 509 510 511 512 513 514 515 516 517 518 519 520 521 522 523 524 525 526 527 528 529 530 531 532 533 534 535 536 537 538 539 540 541 542 543 544 545 546 547 548 549 550 551 552 553 554 555 556 557 558 559 560 561 562 563 564 565 566 567 568 569 570 571 572 573 574 575 576 577 578 579 580 581 582 583 584 585 586 587 588 589 590 591 592 593 594 595 596 597 598 599 600 601 602 603 604 605 606 607 608 609 610 611 612 613 614 615 616 617 618 619 620 621 622 623 624 625 626 627 628 629 630 631 632 633 634 635 636 637 638 639 640 641 642 643 644 645 646 647 648 649 650 651 652 653 654 655 656 657 658 659 660 661 662 663 664 665 666 667 668 669 670 671 672 673 674 675 676 677 678 679 680 681 682 683 684 685 686 687 688 689 690 691 692 693 694 695 696 697 698 699 700 701 702 703 704 705 706 707 708 709 710 711 712 713 714 715 716 717 718 719 720 721 722 723 724 725 726 727 728 729 730 731 732 733 734 735 736 737 738 739 740 741 742 743 744 745 746 747 748 749 750 751 752 753 754 755 756 757 758 759 760 761 762 763 764 765 766 767 768 769 770 771 772 773 774 775 776 777 778 779 780 781 782 783 784 785 786 787 788 789 790 791 792 793 794 795 796 797 798 799 800 801 802 803 804 805 806 807 808 809 810 811 812 813 814 815 816 817 818 819 820 821 822 823 824 825 826 827 828 829 830 831 832 833 834 835 836 837 838 839 840 841 842 843 844 845 846 847 848 849 850 851 852 853 854 855 856 857 858 859 860 861 862 863 864 865 866 867 868 869 870 871 872 873 874 875 876 877 878 879 880 881 882 883 884 885 886 887 888 889 890 891 892 893 894 895 896 897 898 899 900 901 902 903 904 905 906 907 908 909 910 911 912 913 914 915 916 917 918 919 920 921 922 923 924 925 926 927 928 929 930 931 932 933 934 935 936 937 938 939 940 941 942 943 944 945 946 947 948 949 950 951 952 953 954 955 956 957 958 959 960 961 962 963 964 965 966 967 968 969 970 971 972 973 974 975 976 977 978 979 980 981 982 983 984 985 986 987 988 989 990 991 992 993 994 995 996 997 998 999 1000

Leu Asp Tyr Tyr Ile Cys Lys Ile Pro Arg Trp Asp Leu Thr Lys Phe
 355 360 365
 Ala Gly Val Ser Arg Glu Ile Gly Ser Ser Met Lys Ser Val Gly Glu
 370 375 380
 Ile Met Ser Ile Gly Arg Ser Phe Glu Glu Ile Ile Gln Lys Gly Leu
 385 390 395 400
 Arg Met Ile Gly Gln Gly Met His Gly Phe Val Gly Asn Asp Asp Val
 405 410 415
 His Phe Glu Asp Leu Asp Lys Glu Leu Ser His Pro Thr Asp Leu Arg
 420 425 430
 Ile Phe Ala Leu Ala Gln Ala Met Glu Glu Gly Tyr Thr Ile Glu Arg
 435 440 445
 Ile His Glu Leu Thr Lys Ile Asp Pro Trp Phe Leu Gly Lys Leu Lys
 450 455 460
 Asn Ile Val Asp Tyr Lys Ala Lys Leu Ser Ala Tyr Asp Lys Val Glu
 465 470 475 480
 Asp Ile Pro Ala Asp Val Leu Arg Glu Ala Lys Val Leu Gly Phe Ser
 485 490 495
 Asp Phe Gln Ile Ala Arg Phe Val Leu Asn Pro Val Gly Asn Met Glu
 500 505 510
 Lys Glu Asn Leu Met Val Arg Ala Arg Arg Lys Glu Leu Gly Ile Leu
 515 520 525
 Pro Ala Val Lys Arg Ile Asn Thr Ile Ala Ser Glu His Pro Glu Leu
 530 535 540
 Thr Asn Tyr Leu Tyr Met Thr Tyr Ala Val Gln Gly Tyr Asp Val Asn
 545 550 555 560
 Tyr Tyr Lys Asn Glu Lys Ser Val Val Val Leu Gly Ser Gly Ala Tyr
 565 570 575
 Arg Ile Gly Ser Ser Val Glu Phe Asp Trp Cys Ser Val Asn Ala Val
 580 585 590
 Gln Thr Ala Arg Lys Leu Gly Tyr Lys Ser Ile Met Ile Asn Tyr Asn
 595 600 605
 Pro Glu Thr Val Ser Thr Asp Tyr Asp Met Cys Asp Arg Leu Tyr Phe
 610 615 620
 Asp Glu Leu Ser Phe Glu Arg Val Leu Asp Val Ile Asp Leu Glu Gln
 625 630 635 640
 Pro Arg Gly Val Ile Val Ser Val Gly Gly Gln Ile Pro Asn Asn Leu
 645 650 655
 Ala Met Lys Leu Tyr Arg Gln Ser Val Pro Val Leu Gly Thr Ser Pro
 660 665 670
 Ile Ser Ile Asp Arg Ala Glu Asn Arg Asn Lys Phe Ser Ala Met Leu
 675 680 685
 Asp Gln Leu Gly Ile Asp Gln Pro Ala Trp Gln Glu Leu Thr Ser Leu
 690 695 700
 Glu Asp Val Lys Gly Phe Val Glu Lys Val Gly Tyr Pro Val Leu Val
 705 710 715 720
 Arg Pro Ser Tyr Val Leu Ser Gly Ala Ala Met Asn Val Cys Tyr Asp
 725 730 735
 Asp Glu Glu Leu Glu Asn Phe Leu Lys Met Ala Ala Glu Val Ser Lys
 740 745 750
 Glu Tyr Pro Val Val Val Ser Gln Phe Leu Glu Asn Thr Lys Glu Ile
 755 760 765
 Glu Phe Asp Ala Val Ala Gln Asn Gly Glu Val Val Glu Tyr Ala Ile
 770 775 780
 Ser Glu His Ile Glu Phe Ala Gly Val His Ser Gly Asp Ala Thr Leu
 785 790 795 800
 Val Phe Pro Ala Gln Lys Ile Tyr Phe Ala Thr Ala Arg Arg Ile Lys
 805 810 815
 Lys Ile Ser Arg Gln Ile Ala Lys Glu Leu Asn Ile Ser Gly Pro Phe

820 825 830
 Asn Ile Gln Phe Leu Ala Arg Asn Asn Glu Val Lys Val Ile Glu Cys
 835 840 845
 Asn Leu Arg Ala Ser Arg Ser Phe Pro Phe Val Ser Lys Val Leu Lys
 850 855 860
 Arg Asn Phe Ile Glu Thr Ala Thr Arg Ile Met Leu Asp Ala Pro Tyr
 865 870 875 880
 Ser Arg Pro Asp Lys Ser Ala Phe Asp Ile Asp Trp Ile Gly Val Lys
 885 890 895
 Ala Ser Gln Phe Ser Phe Ser Arg Leu His Lys Ala Asp Pro Val Leu
 900 905 910
 Gly Val Asp Met Ser Ser Thr Gly Glu Val Gly Cys Ile Gly Asp Asp
 915 920 925
 Phe Ser Glu Ala Leu Leu Asn Ala Met Ile Ala Thr Gly Phe Lys Ile
 930 935 940
 Pro Gly Lys Gly Val Met Phe Ser Ser Gly Ala Met Lys Ser Lys Val
 945 950 955 960
 Asp Leu Leu Glu Ala Ser Arg Met Leu Phe Asn Gln Gly Tyr Lys Ile
 965 970 975
 Tyr Ala Thr Ala Gly Thr Ala Ala Phe Leu Asn Ala His Gly Val Asp
 980 985 990
 Thr Thr Pro Val Tyr Trp Pro Asp Glu Lys Pro Gly Ala Glu Asn Asn
 995 1000 1005
 Val Met Lys Met Ile Ala Asp His Lys Phe Asp Leu Ile Val Asn Ile
 1010 1015 1020
 Pro Lys Asn His Ser Lys Arg Glu Leu Thr Asn Gly Tyr Arg Ile Arg
 1025 1030 1035 1040
 Arg Gly Ala Ile Asp His Asn Ile Pro Leu Ile Thr Asn Ala Arg Leu
 1045 1050 1055
 Ala Ser Ala Phe Ile Glu Ala Phe Cys Asp Leu Lys Leu Glu Asp Ile
 1060 1065 1070
 Gln Ile Lys Ser Trp Gln Glu Tyr Lys
 1075 1080

<210> 9379
 <211> 112
 <212> PRT
 <213> B.fragilis

<400> 9379
 Ile Phe Thr Val Leu Lys Lys Thr Ile Lys Ser Phe Pro Ile Phe Gln
 1 5 10 15
 Pro Glu Lys Trp Lys Tyr Leu Leu Leu Pro Phe Pro Lys Asp Asn Pro
 20 25 30
 Leu Lys Met Phe Ser Tyr Leu Ile Ser Ile Ala Lys Ile Ile Val Leu
 35 40 45
 Leu Cys Val Ile Gln Lys Ile Tyr Leu Asn Leu Pro Pro Ile Ser Ser
 50 55 60
 Pro Val Thr Tyr Glu Val Thr Asp Ile Phe Ser Ile Ser Asn Gln Ala
 65 70 75 80
 Ile Ser Phe Leu Phe Phe Leu Ser Val Pro Leu Phe Phe Phe Asp Lys
 85 90 95
 Ile Tyr Val Ile Arg Glu Leu Phe Ile Arg Phe Thr Ser Ser Ser Leu
 100 105 110

<210> 9380
 <211> 191
 <212> PRT
 <213> B.fragilis

<400> 9380

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Leu Ser Lys Ser Phe Phe Glu Arg Ser Asn His Arg Arg Gln Arg His
1          5          10          15
Thr Ser Leu Ile Met Thr Leu Ala Asp Gln Cys Gly Cys Thr Asp His
          20          25          30
Gly Ile Tyr Ala Ser Ala Ser Asn Phe His Cys Thr Leu Asp Tyr
          35          40          45
Asp Asp Pro Asp Asp Pro Thr Gln Ala Leu Tyr Gln Lys Glu Thr Asp
          50          55          60
Asn Ser Arg Ile Lys Thr Cys Thr Leu Glu Pro Lys Leu Asp Tyr Arg
          65          70          75          80
Leu Cys Val Phe Ser Cys Arg Asn Thr Leu Leu Arg Asn Arg Arg Thr
          85          90          95
Tyr Tyr Leu Tyr Leu Tyr Trp Thr Ile Phe His Lys Gly Ile Pro Glu
          100          105          110
Val Thr Tyr Leu Pro Pro Asn Ile Asp Phe Ala Thr Arg Gln Thr Asn
          115          120          125
His Phe Phe Thr Thr Ser Tyr Glu Ser Arg Met Pro Phe Glu Thr Ile
          130          135          140
Leu Asn Ser Thr His Leu His Ser Thr Tyr Asn Val Ser Gln Arg Ile
          145          150          155          160
Leu Val Glu Ile Asn Ser Gly Pro Phe Tyr Trp Ile Gly Lys Pro Glu
          165          170          175
Leu Leu Glu Thr Ser Pro Ser Ile Ser Gln Asp Phe Ser Arg Asn
          180          185          190

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<210> 9381

<211> 389

<212> PRT

<213> B.fragilis

<400> 9381

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Tyr Lys Met Leu Gln Pro Glu Leu Lys Met Arg Arg Asp Lys Ile Arg
1          5          10          15
Val Leu Met Ala Gln Gln Asn Ile Glu Ala Ala Leu Ile Thr Cys Asn
          20          25          30
Val Asn Leu Leu Tyr Thr Tyr Gly Arg Ile Val Ser Gly Tyr Leu Tyr
          35          40          45
Leu Pro Leu His Ser Pro Ala Leu Leu Phe Ile Lys Arg Pro Asn Asn
          50          55          60
Ile Thr Gly Glu His Val Phe Pro Ile Arg Lys Pro Glu Gln Ile Pro
          65          70          75          80
Asp Leu Ile Lys Glu Asn Asn Leu Pro Met Pro Gln Lys Leu Met Leu
          85          90          95
Glu Gly Asp Glu Leu Ser Phe Thr Glu Tyr Asn Arg Leu Ala Ala Ile
          100          105          110
Phe Pro Glu Ser Glu Ile Val Asn Gly Thr Pro Leu Ile Arg Glu Ala
          115          120          125
Arg Ser Val Lys Thr Pro Val Glu Ile Glu Leu Phe Arg Arg Ser Gly
          130          135          140
Val Ala His Ala Lys Ala Tyr Asp Gln Ile Pro Ser Val Tyr Arg Pro
          145          150          155          160
Gly Met Thr Asp Leu Glu Phe Ser Ile Glu Ile Glu Arg Leu Met Arg
          165          170          175
Leu Gln Gly Asn Leu Gly Ile Phe Arg Val Phe Gly Gln Ser Met Glu
          180          185          190
Ile Phe Met Gly Ser Val Leu Thr Gly Asp Asn Ala Ala Tyr Pro Ser
          195          200          205

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Pro Tyr Asp Phe Ala Leu Gly Gly Glu Gly Leu Asp Pro Ala Leu Pro
 210 215 220
 Gly Gly Leu Asn Lys Thr Pro Leu Lys Glu Gly Gln Ser Val Met Val
 225 230 235 240
 Asp Leu Gly Gly Asn Phe Asn Gly Tyr Met Gly Asp Met Ser Arg Val
 245 250 255
 Phe Ser Val Gly Lys Leu Ser Asp Glu Ala Tyr Thr Ala His Gln Val
 260 265 270
 Cys Leu Asp Ile Gln Glu Ala Val Ser Ser Met Ala Gln Pro Gly Val
 275 280 285
 Val Cys Glu Asp Leu Tyr Asn Ala Ala Ile Asn Ile Val Thr Lys Ala
 290 295 300
 Gly Phe Ala Asp Lys Phe Met Gly Ile Ser Gln Gln Ala Lys Phe Ile
 305 310 315 320
 Gly His Gly Ile Gly Leu Glu Ile Asn Glu Ala Pro Val Leu Ala Pro
 325 330 335
 Arg Met Lys Gln Glu Leu Glu Pro Gly Met Val Phe Ala Leu Glu Pro
 340 345 350
 Lys Ile Val Ile Pro Gly Val Gly Pro Val Gly Ile Glu Asn Ser Trp
 355 360 365
 Ala Val Thr Pro Glu Gly Val Glu Lys Leu Thr Ile Cys Asn Glu Glu
 370 375 380
 Ile Ile Glu Leu Gln
 385

<210> 9382
 <211> 69
 <212> PRT
 <213> B.fragilis

<400> 9382
 Leu Ser Ala Phe Leu Tyr Ser Ala Ser Leu Thr Glu Arg Val Phe Val
 1 5 10 15
 Glu Lys Glu Gly Leu Ala Glu Ser Pro Arg Leu Asn Val Pro Thr Pro
 20 25 30
 Tyr Glu Thr Ala Ser Leu Pro Glu Ser His Glu Ala Thr His Glu Ile
 35 40 45
 Ser Ile Ala Ile Leu Thr Ile Lys Glu Ser Leu Phe Ile Met Ile Thr
 50 55 60
 Thr Asn Tyr Tyr Ser
 65

<210> 9383
 <211> 471
 <212> PRT
 <213> B.fragilis

<400> 9383
 His Gln Lys Thr Phe Leu Ile Phe Ala Tyr Glu Thr Ser Tyr Ile Leu
 1 5 10 15
 Ser Glu Ser Thr Phe Leu Lys His Thr Ile Met Asn Ile Glu Lys Ile
 20 25 30
 Met Ser Ser Leu Glu Ala Lys His Pro Gly Glu Ser Glu Tyr Leu Gln
 35 40 45
 Ala Val Lys Glu Val Leu Leu Ser Ile Glu Asp Ile Tyr Asn Gln His
 50 55 60
 Pro Glu Phe Glu Lys Ala Lys Ile Ile Glu Arg Leu Val Glu Pro Asp
 65 70 75 80
 Arg Ile Phe Thr Phe Arg Val Thr Trp Val Asp Asp Lys Gly Glu Val

				85				90				95			
Gln	Thr	Asn	Leu	Gly	Tyr	Arg	Val	Gln	Phe	Asn	Asn	Ala	Ile	Gly	Pro
			100					105					110		
Tyr	Lys	Gly	Gly	Ile	Arg	Phe	His	Ala	Ser	Val	Asn	Leu	Ser	Ile	Leu
		115					120					125			
Lys	Phe	Leu	Gly	Phe	Glu	Gln	Thr	Phe	Lys	Asn	Ala	Leu	Thr	Thr	Leu
	130					135					140				
Pro	Met	Gly	Gly	Gly	Lys	Gly	Gly	Ser	Asp	Phe	Ser	Pro	Arg	Gly	Lys
145					150					155					160
Ser	Asp	Ala	Glu	Ile	Met	Arg	Phe	Cys	Gln	Ala	Phe	Met	Leu	Glu	Leu
			165					170					175		
Trp	Arg	His	Leu	Gly	Pro	Asp	Met	Asp	Val	Pro	Ala	Gly	Asp	Ile	Gly
		180						185					190		
Val	Gly	Gly	Arg	Glu	Val	Gly	Tyr	Met	Phe	Gly	Met	Tyr	Lys	Lys	Leu
	195					200						205			
Thr	Arg	Glu	Phe	Thr	Gly	Thr	Phe	Thr	Gly	Lys	Gly	Leu	Glu	Phe	Gly
	210				215						220				
Gly	Ser	Leu	Ile	Arg	Pro	Glu	Ala	Thr	Gly	Phe	Gly	Gly	Leu	Tyr	Phe
225				230					235						240
Val	Asn	Gln	Met	Leu	Gln	Thr	Lys	Gly	Ile	Asp	Ile	Lys	Gly	Lys	Thr
		245						250						255	
Val	Ala	Ile	Ser	Gly	Phe	Gly	Asn	Val	Ala	Trp	Gly	Ala	Ala	Thr	Lys
	260							265					270		
Ala	Thr	Glu	Leu	Gly	Ala	Lys	Val	Val	Thr	Ile	Ser	Gly	Pro	Asp	Gly
	275						280					285			
Tyr	Ile	Tyr	Asp	Pro	Asn	Gly	Ile	Ser	Gly	Glu	Lys	Ile	Asp	Tyr	Met
	290				295						300				
Leu	Glu	Leu	Arg	Ala	Ser	Gly	Asn	Asp	Ile	Val	Ala	Pro	Tyr	Ala	Asp
305				310					315						320
Glu	Phe	Pro	Gly	Ser	Thr	Phe	Val	Ala	Gly	Lys	Arg	Pro	Trp	Glu	Val
		325						330						335	
Lys	Ala	Asp	Ile	Ala	Leu	Pro	Cys	Ala	Thr	Gln	Asn	Glu	Leu	Asn	Gly
	340						345						350		
Glu	Asp	Ala	Lys	Asn	Leu	Ile	Asp	Asn	Asn	Val	Leu	Cys	Val	Gly	Glu
	355						360					365			
Ile	Ser	Asn	Met	Gly	Cys	Thr	Pro	Glu	Ala	Ile	Asp	Leu	Phe	Ile	Glu
	370				375						380				
His	Lys	Thr	Met	Tyr	Ala	Pro	Gly	Lys	Ala	Val	Asn	Ala	Gly	Gly	Val
385			390						395						400
Ala	Thr	Ser	Gly	Leu	Glu	Met	Ser	Gln	Asn	Ala	Met	His	Leu	Ser	Trp
		405						410						415	
Ser	Ala	Ala	Glu	Val	Asp	Glu	Lys	Leu	His	Ser	Ile	Met	His	Gly	Ile
	420						425					430			
His	Ala	Gln	Cys	Val	Lys	Tyr	Gly	Thr	Glu	Pro	Asp	Gly	Tyr	Ile	Asn
	435					440						445			
Tyr	Val	Lys	Gly	Ala	Asn	Ile	Ala	Gly	Phe	Met	Lys	Val	Ala	His	Ala
	450				455						460				
Met	Met	Gly	Gln	Gly	Ile	Ile									
465					470										

<210> 9384

<211> 248

<212> PRT

<213> B.fragilis

<400> 9384

Val	Asn	Ile	Lys	Arg	Leu	Val	Tyr	Met	Asn	Ala	Ile	Lys	Asn	Ile	Tyr
1			5				10						15		
Ala	Val	Leu	Ala	Leu	Ile	Ala	Leu	Cys	Leu	Ser	Ser	Cys	Glu	Met	Lys

			20					25					30				
Asn	Glu	Leu	Glu	Gly	Lys	Tyr	Asn	Leu	Lys	Asn	Asp	Glu	Gly	Leu	Leu		
		35					40					45					
Thr	Leu	Asp	Leu	Val	Asn	Lys	Thr	Gln	Ala	Thr	Pro	Thr	Thr	Lys	Ala		
	50					55					60						
Glu	Ser	Thr	Ser	Leu	Thr	Asp	Glu	Leu	Asp	Val	Asn	Thr	Tyr	Lys	Val		
65					70					75					80		
Glu	Ile	Val	Asp	Asn	Ala	Thr	Glu	Ala	Val	Val	Arg	Ser	Phe	Ala	Ser		
				85					90					95			
Tyr	Ala	Lys	Leu	Lys	Glu	Ala	Leu	Pro	Leu	Val	Val	Pro	Val	Gly	Asn		
			100					105					110				
Tyr	Lys	Ile	Val	Ala	Lys	Ser	Gly	Val	Leu	Gln	Asp	Ala	Ser	Arg	Thr		
		115					120					125					
Pro	Tyr	Phe	Glu	Gly	Ser	Ser	Ser	Ile	Glu	Val	Lys	Gln	Gly	Met	Glu		
	130					135					140						
Ser	Lys	Ala	Glu	Val	Leu	Cys	Lys	Ser	Ala	Thr	Val	Lys	Val	Ser	Leu		
145					150					155					160		
Asn	Ile	Ser	Glu	Glu	Phe	Leu	Asn	Met	Phe	Ala	Asp	Asp	Tyr	Val	Phe		
				165					170					175			
Thr	Val	Ser	Asn	Gly	Ile	Gly	Gly	Val	Ile	Tyr	Val	Lys	Lys	Glu	Asp		
			180					185					190				
Leu	Ser	Ser	Ile	Tyr	His	Ser	Ile	Gln	Ala	Gly	Cys	Thr	Ser	Ile	Asn		
		195					200					205					
Ile	Val	Ser	Lys	Glu	Arg	Gln	Lys	Asn	Ser	Gly	Arg	Asp	Ile	Glu	Thr		
	210					215					220						
Val	Asp	Thr	Val	Thr	Ser	His	Met	Gln	Lys	Val	Cys	Lys	Arg	Val	Ile		
225					230					235					240		
Leu	Leu	Met	Ser	Arg	Cys	Asn	Arg										
				245													

<210> 9385

<211> 201

<212> PRT

<213> B.fragilis

<400> 9385

Lys	Ser	Val	Lys	Ile	Arg	Thr	Ile	Gln	Asn	Val	Thr	Arg	Ser	Asp	Gln		
1			5						10					15			
Lys	Trp	Gly	Ile	Gln	Leu	His	Ile	Asp	Leu	Thr	Met	Asp	Glu	Thr	Gly		
			20					25				30					
Ile	Pro	Val	Lys	Val	Pro	Thr	Glu	Leu	Ile	Glu	Gln	Ser	Asn	Pro	Glu		
		35					40					45					
Asp	Pro	Asp	Gln	Pro	Ser	Asp	Pro	Asp	Gln	Pro	Thr	Val	Asp	Glu	Pro		
	50					55					60						
Asp	Ile	Ile	Gly	Pro	Tyr	Lys	Val	Val	Lys	Val	Tyr	Thr	Asn	Asn	Pro		
65					70					75					80		
Pro	Thr	Val	Gln	Val	Thr	Met	Thr	Ala	Pro	Ala	Gly	Ile	Gln	Asn	Leu		
				85					90					95			
Leu	Val	Thr	Ile	Thr	Ser	Asp	Ser	Thr	Glu	Phe	Ile	Gly	Leu	Ile	Ser		
			100					105					110				
Gln	Met	Gly	Leu	Gly	Glu	Thr	Phe	Asp	Leu	Ala	Asn	Pro	Gly	Asp	Leu		
		115					120					125					
Glu	Asp	Lys	Leu	Glu	Gly	Ser	Leu	Glu	Val	Gly	Ser	Gly	Ile	Gly	Val		
	130					135					140						
Ile	Asp	Pro	Asn	Asp	Pro	Ile	Lys	Asp	Lys	Lys	Glu	Phe	Ile	Phe	His		
145					150					155					160		
Val	Ser	Gly	Phe	Met	Pro	Met	Leu	Ser	Pro	Phe	Gly	Leu	Gln	Gln	His		
				165					170					175			
Tyr	Phe	Thr	Ile	Lys	Leu	Ile	Asp	Asn	Asn	Gly	Thr	Glu	Leu	Ala	Lys		

180 185 190
 Lys Leu Thr Val Lys Val Val Lys Asn
 195 200

<210> 9386
 <211> 994
 <212> PRT
 <213> B.fragilis

<400> 9386

Asn	Tyr	Gly	Lys	Pro	Met	Leu	Ser	Lys	Phe	Lys	Leu	Asn	Gln	Leu	Tyr
1			5						10				15		
Phe	Lys	Asp	Thr	Gln	Phe	Ala	Asn	Leu	Met	Thr	Arg	Arg	Ile	Phe	Asn
		20					25					30			
Val	Leu	Leu	Ile	Ala	Asn	Pro	Tyr	Asp	Ala	Phe	Met	Leu	Glu	Asp	Asp
		35				40					45				
Gly	Arg	Ile	Asp	Glu	Lys	Ile	Phe	Asn	Glu	Tyr	Thr	Ser	Leu	Ser	Leu
	50				55					60					
Arg	Tyr	Pro	Pro	Arg	Phe	Ser	Gln	Val	Ser	Thr	Glu	Glu	Glu	Ala	Leu
65				70					75					80	
Arg	Gln	Leu	Glu	Ser	Val	Ser	Phe	Asp	Leu	Val	Ile	Cys	Met	Pro	Gly
			85					90					95		
Thr	Gly	Asp	Asn	Asp	Ser	Phe	Asp	Ile	Gly	Arg	His	Ile	Lys	Glu	Lys
			100				105					110			
Tyr	Glu	Gln	Ile	Pro	Ile	Val	Ile	Leu	Thr	Pro	Phe	Ser	His	Gly	Ile
		115				120					125				
Thr	Lys	Arg	Ile	Ala	Asn	Glu	Asp	Leu	Ser	Ala	Phe	Asp	Tyr	Val	Phe
	130				135					140					
Cys	Trp	Leu	Gly	Asn	Thr	Asp	Leu	Leu	Val	Ser	Ile	Ile	Lys	Leu	Ile
145				150					155					160	
Glu	Asp	Lys	Met	Asn	Leu	Glu	His	Asp	Val	Lys	Glu	Val	Gly	Val	Gln
			165				170						175		
Leu	Ile	Leu	Leu	Val	Glu	Asp	Ser	Ile	Arg	Phe	Tyr	Ser	Ser	Val	Leu
		180				185						190			
Pro	Asn	Leu	Tyr	Lys	Phe	Val	Leu	Lys	Gln	Ser	Gln	Glu	Phe	Ser	Thr
	195				200						205				
Glu	Ala	Leu	Asn	Ala	His	Gln	Arg	Thr	Leu	Arg	Met	Arg	Gly	Arg	Pro
	210				215					220					
Lys	Ile	Val	Leu	Ala	Arg	Thr	Tyr	Glu	Glu	Ala	Met	Asp	Ile	Tyr	Asn
225				230					235					240	
Lys	Tyr	Thr	Asn	Asn	Ile	Leu	Gly	Val	Ile	Thr	Asp	Val	Arg	Phe	Pro
			245				250						255		
Arg	Val	Asp	Lys	Gly	Glu	Lys	Asp	Gly	Met	Ala	Gly	Ile	Lys	Leu	Cys
		260				265						270			
Ala	Glu	Val	Arg	Lys	Lys	Asp	Pro	Phe	Val	Pro	Leu	Ile	Ile	Gln	Ser
		275				280					285				
Ser	Glu	Thr	Glu	Asn	Ala	Ala	Tyr	Ala	Ala	Lys	Tyr	Gly	Ala	Thr	Phe
	290				295					300					
Ile	Asp	Lys	Asn	Ser	Lys	Lys	Met	Asp	Val	Asp	Leu	Arg	Arg	Ile	Val
305				310					315					320	
Ser	Asp	Asn	Phe	Gly	Phe	Gly	Asp	Phe	Val	Phe	Arg	Asn	Pro	Glu	Thr
			325				330						335		
Gly	Val	Glu	Ile	Ala	Arg	Val	Arg	Asn	Leu	Lys	Glu	Leu	Gln	Asn	Ile
		340				345						350			
Leu	Phe	Ala	Val	Pro	Ala	Glu	Ser	Phe	Leu	Tyr	His	Ile	Ser	Arg	Asn
	355				360						365				
His	Val	Ser	Arg	Trp	Leu	Tyr	Ser	Arg	Ala	Met	Phe	Pro	Val	Ala	Glu
	370				375					380					
Phe	Leu	Arg	Pro	Ile	Thr	Trp	His	Ser	Leu	Gln	Asp	Val	Asp	Ala	His

385	390	395	400
Arg Lys Ile Ile Phe Glu Ala Ile Val Lys Tyr Arg Lys Met Lys Asn			
	405	410	415
Gln Gly Val Val Ala Val Phe Lys Arg Asp Arg Phe Asp Arg Tyr Ser			
	420	425	430
Asn Phe Ala Arg Ile Gly Asp Gly Ser Leu Gly Gly Lys Gly Arg Gly			
	435	440	445
Leu Ala Phe Ile Asp Asn Met Val Lys Arg His Pro Glu Phe Glu Glu			
	450	455	460
Phe Glu Asn Ala Arg Val Ala Ile Pro Lys Thr Val Val Leu Cys Thr			
	465	470	475
Asp Val Phe Asp Glu Phe Met Asp Thr Asn Asn Leu Tyr Gln Val Ala			
	485	490	495
Leu Ser Asp Ala Asp Asp Asp Thr Ile Leu Arg Tyr Phe Leu Lys Ala			
	500	505	510
Lys Leu Pro Asp Arg Leu Val Glu Asp Phe Phe Thr Phe Phe Asp Val			
	515	520	525
Val Lys Ser Pro Ile Ala Ile Arg Ser Ser Ser Leu Leu Glu Asp Ser			
	530	535	540
His Tyr Gln Pro Phe Ala Gly Ile Tyr Asn Thr Tyr Met Ile Pro Tyr			
	545	550	555
Leu Asp Asp Lys Tyr Glu Met Leu Arg Met Leu Ser Asp Ala Ile Lys			
	565	570	575
Gly Val Tyr Ala Ser Val Tyr Phe Arg Asp Ser Lys Ala Tyr Met Gln			
	580	585	590
Ala Thr Ser Asn Val Ile Asp Gln Glu Lys Met Ala Val Ile Leu Gln			
	595	600	605
Gln Val Val Gly Asn Gln Tyr Gly Asp Arg Tyr Tyr Pro Ser Met Ser			
	610	615	620
Gly Val Ala Arg Ser Leu Asn Tyr Tyr Pro Ile Gly Asp Glu Lys Ala			
	625	630	635
Glu Glu Gly Thr Val Asn Leu Ala Leu Gly Leu Gly Lys Tyr Ile Val			
	645	650	655
Asp Gly Gly Met Thr Leu Arg Phe Ser Pro Ala His Pro Ser Lys Val			
	660	665	670
Leu Gln Thr Ser Glu Leu Asp Ile Ala Leu Lys Glu Thr Gln Thr Arg			
	675	680	685
Phe Tyr Ala Leu Asp Leu Lys Asn Ala Gly Asp Asn Phe Ser Ile Asp			
	690	695	700
Asp Gly Phe Asn Leu Leu Lys Leu His Val Lys Glu Ala Glu Lys Asp			
	705	710	715
Gly Ser Leu Arg Tyr Ile Ala Ser Thr Tyr Asp Pro Tyr Asp Gln Val			
	725	730	735
Ile Arg Asp Gly Leu Tyr Pro Gly Gly Arg Lys Val Ile Thr Phe Ala			
	740	745	750
Asn Ile Leu Gln His Asp Val Phe Pro Leu Ala Arg Ile Leu Arg Trp			
	755	760	765
Val Leu Arg Tyr Gly Gln Gln Glu Met Arg Arg Pro Val Glu Ile Glu			
	770	775	780
Phe Ala Val Thr Leu Asn His Asp Arg Asp Lys Thr Gly Thr Phe Tyr			
	785	790	795
Leu Leu Gln Val Arg Pro Ile Val Asp Ser Lys Asp Met Leu Asp Glu			
	805	810	815
Asp Leu Thr Thr Ile Pro Asp Glu Asp Val Leu Leu Arg Ser Asn Asn			
	820	825	830
Ser Leu Gly His Gly Ile Met Asn Glu Ile His Asp Ile Val Tyr Val			
	835	840	845
Lys Thr Asp His Tyr Ser Ala Ser Asn Asn Gln Asn Ile Ala Trp Glu			
	850	855	860

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Ile Glu Lys Ile Asn Gln Gln Phe Leu Asn Glu Gly Lys Asn Tyr Val
 865 870 875 880
 Leu Val Gly Pro Gly Arg Trp Gly Ser Ser Asp Thr Trp Leu Gly Ile
 885 890 895
 Pro Val Lys Trp Pro His Ile Ser Ala Ala Arg Val Ile Val Glu Ala
 900 905 910
 Gly Leu Thr Asn Tyr Arg Val Asp Pro Ser Gln Gly Thr His Phe Phe
 915 920 925
 Gln Asn Leu Thr Ser Phe Gly Val Gly Tyr Phe Thr Ile Asn Ala Phe
 930 935 940
 Met Asn Asp Gly Val Tyr Asn Gln Glu Phe Leu Asn Thr Gln Pro Ala
 945 950 955 960
 Val Phe Glu Thr Glu Tyr Leu Arg His Val Arg Phe Glu Arg Pro Ile
 965 970 975
 Val Val Lys Met Asp Gly Lys Lys Lys Leu Gly Val Val Leu Met Pro
 980 985 990
 Asp Lys

<210> 9387
 <211> 81
 <212> PRT
 <213> B.fragilis

<400> 9387
 Asn Ser Thr Asp Lys Ser Arg Cys Phe Tyr Trp Glu Lys Gln Glu Lys
 1 5 10 15
 Thr Ile His Phe Ile Ala Asp Tyr Pro Tyr Met His Arg Leu Leu Ser
 20 25 30
 Arg Phe Arg Leu Lys Ile Ser Pro Thr Leu Ile Arg Ile Asp His Lys
 35 40 45
 Ala Gly His Gly Ser Asn Lys Ala Thr Thr Lys Leu Val Lys Glu Gln
 50 55 60
 Ala Asp Ile Tyr Ala Phe Ile Met Tyr Asn Leu Gly Met Lys Met Lys
 65 70 75 80
 Tyr

<210> 9388
 <211> 274
 <212> PRT
 <213> B.fragilis

<400> 9388
 Leu Val Val Ile Ile Met Lys Arg Leu Ser Phe Met Val Ser Met Ala
 1 5 10 15
 Met Leu Ile Ser Cys Val Ala Ser Cys Asp Ser Gly Ser Asp Ala Val
 20 25 30
 Ser Tyr Gly Val Gly Thr Leu Ser Leu Gly Leu Ser Ala Asn Pro Ser
 35 40 45
 Phe Ser Thr Lys Thr Arg Ser Val Asn Glu Ala Glu Tyr Lys Lys Ala
 50 55 60
 Asp Asn Tyr Gln Val Thr Val Lys Asp Ala Asp Gly Ala Ser Leu Tyr
 65 70 75 80
 Asn Gly Leu Tyr Lys Asp Met Pro Leu Ser Ile Asp Leu Thr Ala Gly
 85 90 95
 Lys Gly Tyr Thr Val Lys Ala Phe Tyr Gly Glu Asn Val Asn Ala Gly
 100 105 110
 Phe Asp Lys Leu Tyr Val Glu Gly Ser Gln Glu Phe Thr Val Ser Glu

115	120	125
Gly Glu Gln Lys Asn Val Ile Leu Tyr Cys Lys Pro Ala Asn Val Lys		
130	135	140
Val Ser Val Ile Tyr Thr Glu Asp Phe Leu Lys Tyr Tyr Ser Asp Cys		
145	150	155
Thr Val Ser Leu Ser Thr Ser His Leu Thr Ala Pro Phe Glu Val Asn		
165	170	175
Met Lys Lys Asp Phe Gly Lys Asp Ala Tyr Leu Lys Ala Asn Ala Asp		
180	185	190
Gly Glu Lys Val Ser Ile Thr Val Gly Gly Phe Arg Asp Lys Glu Gly		
195	200	205
Asn Glu Val Val Met Glu Ala Leu Val Ala Glu Lys Lys Val Ala Pro		
210	215	220
Lys Thr His Leu Thr Ile Thr Val Asp Pro Glu Val Ile Thr Ile Ser		
225	230	235
Thr Gly Thr Ala Ser Leu Asp Val Thr Val Asp Thr Gly Thr Glu Asp		
245	250	255
Lys Asp Val Asn Ile Glu Ile Pro Glu Glu Tyr Trp Pro Gly Asn Ala		
260	265	270
Ser Lys		

<210> 9389
 <211> 104
 <212> PRT
 <213> B.fragilis

<400> 9389

Arg Leu Ser Ala Phe Val Leu Pro Tyr Arg His Arg Tyr Thr Tyr Gln	
1 5 10 15	
Lys Pro Val Pro Ile Asp Tyr Lys Leu Leu Asp Ser Gln Ile Tyr Ser	
20 25 30	
Tyr Leu Ala Ser Leu Ala Leu Leu Ala Ile Gly Tyr Gln Ser Val Ala	
35 40 45	
Ser Leu Leu Tyr Pro Tyr Phe Leu Leu Ser Leu Val Ser Ser Leu Leu	
50 55 60	
Pro Ser Tyr Tyr Leu Ser Ile Tyr Lys Tyr Thr Gln Leu His Asn Ile	
65 70 75 80	
Pro Gln Arg Lys Phe Lys Phe Phe Lys Ile Lys Gly Lys Leu Leu Asn	
85 90 95	
Asn Leu Leu Tyr Thr Leu Leu Leu	
100	

<210> 9390
 <211> 63
 <212> PRT
 <213> B.fragilis

<400> 9390

Ile Ser Lys Tyr Ser Pro Leu Cys Gln Arg Lys Thr Gln Leu Thr Ile	
1 5 10 15	
Phe Phe Val Phe Leu Gln Ser Leu Leu Phe Lys His Thr Phe Leu Tyr	
20 25 30	
Ser Asn Val Phe Val Tyr Tyr Lys Phe Ser Ile Phe Leu Leu Lys Phe	
35 40 45	
Val Leu Phe Leu Pro Glu Lys Leu Tyr Val Cys Thr Ser His Arg	
50 55 60	

<210> 9391

<211> 336
 <212> PRT
 <213> B.fragilis

<400> 9391

Ile	Gly	Asn	Lys	Lys	Val	Ile	Lys	Met	Lys	Gln	Ala	Thr	Thr	Gly	Asn
1				5					10					15	
Lys	Asp	Ile	Ile	Lys	Lys	Leu	Leu	Thr	Asp	Ser	Leu	Ser	Pro	Glu	Glu
			20					25					30		
Arg	Glu	Lys	Leu	Asn	Asn	Tyr	Lys	Phe	Val	Asn	Gln	Ala	Ile	Tyr	Ser
		35					40					45			
Gln	Trp	Glu	Gln	Ala	Ser	Asp	Met	Tyr	Thr	Asp	Val	Asp	Lys	Glu	Glu
	50					55					60				
Arg	Met	Leu	Thr	Asn	Val	Met	His	Gln	Ile	Lys	Lys	Gly	Lys	Thr	Gly
65				70						75				80	
Arg	Phe	Arg	Gln	Asn	Leu	His	Arg	Tyr	Gly	Trp	Val	Ala	Ser	Ile	Ala
				85					90					95	
Leu	Leu	Leu	Ile	Cys	Gly	Thr	Leu	Ser	Leu	Met	Leu	Leu	Ser	Arg	Lys
			100					105					110		
Ala	Glu	Pro	Glu	Val	Trp	Tyr	Val	Leu	Asn	Ser	Gly	Arg	Gln	Ser	Met
		115					120					125			
Asp	Ser	Val	Arg	Leu	Ala	Asp	Gly	Thr	Leu	Val	Met	Leu	Asn	Ala	Gly
		130				135					140				
Ser	Arg	Leu	Thr	Tyr	Pro	Lys	Glu	Phe	Ser	Gly	Asn	Lys	Arg	Glu	Val
145					150					155				160	
Thr	Leu	Ser	Gly	Gln	Ala	Phe	Phe	Ser	Val	His	Pro	Asp	Lys	Ala	His
				165					170					175	
Pro	Phe	Val	Val	Lys	Thr	Lys	Asn	Met	Asp	Val	Thr	Ala	Leu	Gly	Thr
			180					185					190		
Ala	Phe	Glu	Val	Phe	Ser	Phe	Asp	Gly	Asp	Glu	Ser	Val	Glu	Thr	Val
		195					200					205			
Leu	Leu	Asn	Gly	Lys	Val	Lys	Val	Glu	Pro	Lys	Asp	His	Lys	Glu	Gln
		210				215					220				
Ile	Lys	Gly	Glu	Tyr	Ile	Leu	Gln	Pro	Asn	Glu	Lys	Leu	Thr	Cys	Gln
225					230					235				240	
Val	Asn	Gly	Asp	Ile	Arg	Ile	Asp	Arg	Val	Asp	Ala	Asn	Ser	Tyr	Ser
			245						250					255	
Ala	Trp	Arg	Ile	Gly	Gly	Arg	Leu	Ser	Phe	Lys	Asn	Glu	Thr	Leu	Ala
			260					265					270		
Met	Ile	Leu	Pro	Arg	Leu	Glu	Lys	Trp	Tyr	Gly	Gln	Lys	Ile	Asp	Cys
		275					280					285			
Pro	Gln	Lys	Thr	Ala	Asp	His	Tyr	Arg	Phe	Thr	Phe	Thr	Leu	Arg	Asn
		290				295					300				
Glu	Pro	Leu	Asp	Leu	Ile	Leu	Asn	Ile	Met	Ser	His	Ser	Ala	Pro	Leu
305					310					315				320	
Asn	Tyr	Lys	Leu	Ile	Ser	Asn	Asp	Tyr	Tyr	Val	Leu	Glu	Glu	Leu	Lys
			325						330					335	

<210> 9392
 <211> 515
 <212> PRT
 <213> B.fragilis

<400> 9392

Lys	Gln	Ala	Asn	Ala	Glu	Ala	Glu	Ser	Gly	Val	Trp	Lys	His	Leu	Leu
1			5						10					15	
Val	Leu	Pro	Glu	Leu	His	Gln	Ser	Val	Trp	Arg	Gln	Asn	His	Lys	Glu
			20					25				30			
Leu	Ile	Cys	Lys	Asp	Met	Lys	Thr	Ile	Tyr	Ile	Leu	Leu	Ile	Thr	Val

35	40	45
Leu Ser Trp Ser Leu Gln Ala Cys Thr Ala Gln Cys Gly Lys Pro Asp		
50	55	60
Ala Cys Thr Asp Ser Ile Pro Arg Ile Tyr Pro Asp Tyr Ala Gly Val		
65	70	75
Thr Phe Pro Leu Asn Ile Ala Pro Pro Asn Phe Arg Ile Gly Glu Asn		
85	90	95
Ala Asp Ala Phe Gln Thr Glu Ile Gly Thr Gly Glu Thr Ala Asp Ile		
100	105	110
Leu Tyr Thr Ser Lys Ser Pro Glu Val Ile Ile Pro Thr Lys Lys Trp		
115	120	125
Lys Lys Leu Leu Gln Lys Ala Ala Gly Lys Glu Ile Phe Ile Arg Ile		
130	135	140
Thr Leu Leu Arg Gly Gly Lys Trp Thr Arg Tyr Ala Asp Ile Lys Asp		
145	150	155
Thr Ile Ser Asn Glu Pro Ile Asp Glu Tyr Leu Val Tyr Arg Leu Leu		
165	170	175
Tyr Pro Gly Tyr Glu Leu Trp Asn Glu Met Gly Ile Tyr Gln Arg Asp		
180	185	190
Leu Thr Gly Tyr Glu Glu Thr Pro Ile Ala Glu Asn Arg Asn Phe Gly		
195	200	205
Lys Gln Cys Ile Asn Cys His Thr Phe Asn Gln Asn Ser Pro Glu Thr		
210	215	220
Met Met Val His Val Arg Gly Lys Ser Gly Gly Thr Leu Ile Cys Lys		
225	230	235
Asn Gly Lys Val Glu Lys Val Asn Thr Lys Pro Glu Gly Phe Lys Asn		
245	250	255
Gly Gly Thr Tyr Ala Ala Trp His Pro Ser Gly Arg Tyr Ile Ala Phe		
260	265	270
Ser Met Asn Glu Ile Gln Gln Phe Phe His Ser Ser Gly Gln Lys Pro		
275	280	285
Ile Glu Val Ser Asp Leu Ala Ala Asp Leu Met Val Tyr Asp Thr Glu		
290	295	300
Lys Lys Thr Phe Leu Thr Asp Ser Leu Ile Cys Gly Glu Arg Tyr Met		
305	310	315
Glu Thr Phe Pro Asn Trp Thr Pro Asp Gly Lys Thr Leu Tyr Phe Cys		
325	330	335
Arg Gly Asn Ala Tyr Lys Glu Lys Met Pro Leu Asp Ser Ile Arg Tyr		
340	345	350
Asp Leu Cys Arg Ile Gly Phe Asp Pro Glu Ser Gly Lys Phe Gly Thr		
355	360	365
Pro Glu Cys Val Tyr Arg Ala Ser Glu Gln Gly Lys Ser Val Ser Phe		
370	375	380
Pro Arg Val Ser Pro Asp Gly Lys Tyr Leu Met Phe Thr Leu Ser Asp		
385	390	395
Tyr Gly Asn Phe Ser Ile Trp His Pro Glu Ser Glu Leu Cys Leu Leu		
405	410	415
Thr Met Asp Thr Gly Glu Ile Arg Phe Leu Asn Glu Val Asn Ser Asn		
420	425	430
Asp Val Glu Ser Phe His Thr Trp Ser Ser Ser Gly Arg Trp Phe Val		
435	440	445
Phe Ser Ser Lys Arg Leu Asp Gly Leu Trp Ala Arg Pro Phe Phe Ala		
450	455	460
Ser Phe Asp Pro Glu Thr Gly Lys Ala Gly Lys Pro Phe Leu Met Pro		
465	470	475
Gln Lys Asp Pro Asp Phe Tyr Asp Thr Phe Thr Lys Thr Tyr Asn Leu		
485	490	495
Pro Glu Leu Ile Lys Gln Pro Val Arg Asn Gly Asn Glu Met Ile Lys		
500	505	510

1000
 900
 800
 700
 600
 500
 400
 300
 200
 100
 0

Ala Ile His
515

<210> 9393

<211> 545

<212> PRT

<213> B.fragilis

<400> 9393

Gln	Asn	Met	Lys	Asn	Lys	Ile	Leu	Tyr	Ile	Ile	Ala	Ser	Val	Met	Leu
1				5					10					15	
Thr	Gly	Phe	Thr	Ser	Cys	Ser	Asp	Phe	Leu	Asp	Arg	Tyr	Pro	Thr	Glu
			20					25					30		
Glu	Leu	Ser	Asp	Gly	Ser	Phe	Trp	Lys	Thr	Lys	Thr	Asp	Ala	Glu	Met
		35					40					45			
Ala	Val	Ser	Asp	Ile	Tyr	Arg	Cys	Leu	Pro	Asn	Trp	Asp	Ile	Asp	Glu
	50					55					60				
Asp	Ile	Asn	Ser	Asp	Asn	Ala	Val	His	Gly	Ile	Lys	Trp	Ala	Asn	Gly
65					70					75				80	
Asn	Val	Ser	Lys	Gly	Val	Tyr	Asp	Pro	Ala	Asp	Gln	Gly	Trp	Ser	Glu
			85						90					95	
Asp	Tyr	Gly	Tyr	Ile	Arg	Arg	Cys	Asn	Leu	Val	Leu	Gln	Lys	Leu	Glu
		100						105						110	
Glu	Met	Glu	Leu	Ser	Gln	Ser	Asp	Lys	Glu	Pro	Ile	Ala	Gly	Gln	Ala
		115					120					125			
Tyr	Phe	Phe	Arg	Gly	Tyr	Ile	Tyr	Phe	Glu	Leu	Ile	Arg	Lys	Phe	Gly
	130					135						140			
Asp	Val	Pro	Tyr	Ile	Asp	Gln	Pro	Leu	Lys	Leu	Thr	Asp	Val	Glu	Asp
145					150						155			160	
Ile	Thr	Arg	Thr	Ser	Lys	Asp	Glu	Ile	Tyr	Thr	Lys	Ile	Met	Ala	Asp
				165					170					175	
Phe	Asp	Lys	Ala	Phe	Ser	Tyr	Leu	Pro	Glu	Glu	Trp	Pro	Ala	Thr	Gln
			180					185					190		
Trp	Gly	Arg	Ile	Thr	Lys	Gly	Ala	Ala	Met	Ala	Met	Lys	Ala	Arg	Ala
	195						200					205			
Ala	Leu	Tyr	Phe	Gly	Asn	Trp	Glu	Thr	Ala	Ala	Thr	Ala	Ala	Lys	Ser
	210					215						220			
Val	Met	Asp	Leu	Asn	Lys	Tyr	Asp	Leu	Tyr	Asp	Lys	Glu	Asn	Thr	Gly
225					230					235				240	
Lys	Tyr	Gln	Glu	Leu	Phe	Trp	Glu	Lys	Thr	Asp	Gly	Cys	Glu	Glu	Ile
			245						250					255	
Ile	Leu	Ala	Val	Gln	Tyr	Asn	Ala	Pro	Asp	Lys	Thr	Asn	Tyr	Leu	Ile
			260					265					270		
Gly	Trp	Glu	Cys	Phe	Pro	Thr	Lys	Gly	Trp	Gly	Gly	Leu	Asn	Pro	Thr
		275					280					285			
Gln	Ser	Leu	Val	Asp	Ala	Phe	Glu	Asp	Ser	Glu	Gly	Ala	Pro	Ile	Ser
	290					295						300			
Lys	Ser	Lys	Ile	Tyr	Ser	Glu	Lys	Asn	Pro	Phe	Ala	Asn	Arg	Asp	Pro
305					310					315				320	
Arg	Leu	Glu	Val	Asn	Val	Leu	His	Asp	Gly	Glu	Glu	Met	Tyr	Gly	Val
				325					330					335	
Thr	Ile	Lys	Val	Ala	Pro	Leu	Lys	Ser	Ser	Gly	Ser	Thr	Gly	Ile	Ala
			340					345					350		
Gln	His	Gly	Asp	Ala	Thr	Ala	Thr	Gly	Tyr	Tyr	Gln	Gln	Lys	Trp	Leu
		355					360					365			
Asp	Pro	Ser	Ile	Asp	Pro	Gln	Ser	Ala	Gly	Trp	Glu	Met	Gly	Lys	Asp
	370					375					380				
Trp	Val	Thr	Ile	Arg	Tyr	Ala	Glu	Val	Leu	Leu	Thr	Tyr	Ala	Glu	Ala
385					390					395				400	

115 120 125 130 135 140 145 150 155 160 165 170 175 180 185 190 195 200 205 210 215 220 225 230 235 240 245 250 255 260 265 270 275 280 285 290 295 300 305 310 315 320 325 330 335 340 345 350 355 360 365 370 375 380 385 390 395 400

Year	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099
1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	

<400> 9394

<210> 9395

<400> 9395

Lys	Asn	Glu	Asp	Gly	Gly	Tyr	Glu	Met	Ser	Arg	Leu	Ser	Tyr	Phe	Gly
1				5					10					15	
Arg	Val	Gln	Tyr	Asp	Phe	Met	Asn	Lys	Tyr	Leu	Phe	Glu	Ala	Asn	Leu
			20					25					30		
Arg	Ala	Asp	Ala	Ser	Ser	Arg	Phe	Pro	Lys	Asp	Asn	Arg	Trp	Gly	Val
			35					40					45		
Phe	Pro	Ala	Ile	Ser	Ala	Gly	Trp	Arg	Ile	Ser	Glu	Glu	Thr	Phe	Ile
			50			55					60				
Lys	Asp	Asn	Val	Ser	Trp	Ile	Ser	Asn	Leu	Lys	Leu	Arg	Leu	Gly	Trp
65					70					75				80	
Gly	Lys	Thr	Gly	Asn	Glu	Glu	Leu	Asp	Pro	Asp	Asp	Ile	Tyr	Pro	Ala
				85					90					95	
Ile	Pro	Thr	Tyr	Ala	Tyr	Glu	Lys	Tyr	Met	Phe	Gly	Asn	Ser	Leu	Tyr
			100					105					110		
Ser	Thr	Ala	Tyr	Glu	Ser	Arg	Tyr	Val	Asn	Asn	Asn	Leu	Gln	Trp	Ala
			115					120					125		
Thr	Val	Thr	Asn	Tyr	Glu	Leu	Gly	Leu	Glu	Ala	Gly	Phe	Leu	Asn	Asn

130		135		140
Met Phe Gly Phe Glu Leu Ser Val Tyr Lys Lys Lys Thr Asn Asp Met				
145		150		155
Leu Leu Tyr Met Pro Ile Gln Gly Val Ile Gly Met Gly Ala Pro Ala				
		165		170
Gln Asn Ala Gly Ser Val Glu Asn Thr Gly Phe Asp Leu Asn Leu Leu				
		180		185
His Asn Asn Arg Ile Asn Lys Asp Trp Ser Tyr Ala Val Asn Leu Asn				
		195		200
Ile Ala Tyr Val Lys Asn Glu Ile Ile Asp Met Asn Gly Thr Glu Gly				
		210		215
Ala Asn Ser Lys Asn Asp Lys Leu Trp Tyr Ile Glu Gly Asn Pro Ile				
		225		230
Gly Ser Tyr Tyr Gly Tyr Val Ala Asn Gly Tyr Phe Asn Thr Asp Asp				
		245		250
Glu Leu Ala Asn Tyr Pro Lys Arg Thr Gly Lys Glu Gln Leu Gly Asp				
		260		265
Ile Lys Tyr Leu Asp Leu Asn Gly Asp Gly Lys Ile Thr Ala Asp Gly				
		275		280
Asp Arg Gln Ile Ile Gly Lys Asn Phe Pro Ser Trp Thr Thr Gly Leu				
		290		295
Asn Leu Thr Leu Tyr Tyr Lys Asp Phe Asp Phe Ser Ala Met Phe Gln				
		305		310
Gly Ala Phe Asp Val Asp Gly Tyr Tyr Met Ala Glu Ala Ala Tyr Ala				
		325		330
Phe Tyr Asn Gly Ala Asn Ala Leu Lys Arg His Leu Asp Arg Trp Thr				
		340		345
Pro Glu His His Asn Ala Ser Tyr Pro Arg Ile Thr Lys Asp Ser Gln				
		355		360
Thr Asn Phe Thr Thr Ser Ser Phe Trp Leu Gln Asn Ala Ser Tyr Val				
		370		375
Arg Leu Lys Thr Ile Ser Leu Gly Tyr Asn Leu Pro Asn Ser Phe Leu				
		385		390
Ser Lys Leu Gly Val Gln Lys Ala Lys Leu Tyr Val Ala Gly Glu Asn				
		405		410
Leu Leu Thr Phe Ser Asp Leu Glu Gly Ile Asp Pro Glu Glu Gly Asn				
		420		425
Glu Arg Gly Trp Ser Tyr Gly Asn Val Lys Lys Val Ser Ile Gly Leu				
		435		440
Lys Val Ser Phe				445
		450		

<210> 9396

<211> 201

<212> PRT

<213> B.fragilis

<400> 9396

Asn Leu Tyr Cys Phe Ser Leu Lys Asn Cys Met Phe Ala His His Thr				
1		5		10
Asp Arg Phe Met Thr Glu Lys Glu Leu Ile Val Ser Leu Lys Gln Gly				
		20		25
Asp Glu Ala Ala Phe Thr Ala Leu Tyr Arg Met Tyr Trp Pro Lys Val				
		35		40
His Asn Phe Ser Arg Leu Tyr Leu Ser Ser Ile Ala Glu Val Glu Glu				
		50		55
Val Val Gln Glu Val Phe Val Lys Leu Trp Glu Ala Arg Ile Phe Leu				
		65		70
Lys Glu Asn Glu Ser Phe Lys Gly Phe Leu Phe Ile Ile Thr Arg Asn				
				75
				80

				85					90					95			
Ile	Ile	Phe	Asn	Gln	Phe	Arg	Lys	Ser	Phe	Asn	Glu	Asn	Ala	Tyr	Lys		
			100					105					110				
Thr	Thr	Val	Leu	Ser	Ser	Ala	Glu	Val	Glu	Tyr	Asp	Ile	Glu	Asn	Glu		
		115					120					125					
Met	Asp	Ala	Ala	Asp	Leu	Gln	Gly	Tyr	Ile	Lys	Lys	Leu	Ile	Ser	Glu		
	130					135					140						
Leu	Thr	Pro	Arg	Gln	Gln	Glu	Val	Phe	His	Leu	Ser	Arg	Glu	Glu	His		
145					150					155					160		
Leu	Ser	Tyr	Lys	Glu	Ile	Ala	Ile	Arg	Leu	Ser	Ile	Ser	Glu	Lys	Thr		
			165					170						175			
Val	Glu	Arg	His	Ile	Asn	Glu	Ala	Leu	Lys	Phe	Leu	Arg	Lys	Asn	Ile		
		180					185						190				
Tyr	Leu	Phe	Phe	Ile	Phe	Leu	Ser	Leu									
		195					200										

<210> 9397

<211> 583

<212> PRT

<213> B.fragilis

<400> 9397

His	Phe	Lys	Ser	Asn	Asp	Tyr	Met	Lys	Lys	Ile	Ile	Thr	Leu	Leu	Cys		
1				5				10						15			
Ala	Val	Thr	Thr	Leu	Thr	Ala	Cys	Asp	Ile	Asp	Arg	Leu	Pro	Tyr	Gly		
		20						25				30					
Ser	Met	Ser	Ala	Glu	Gln	Ile	Thr	Gln	Asp	Pro	Thr	Ser	Ser	Leu	Glu		
	35					40					45						
Ser	Leu	Val	Asn	Gly	Cys	Tyr	Ala	Gln	Leu	Lys	Ser	Trp	Ser	Asp	Pro		
	50				55					60							
Met	His	Arg	Leu	Gly	Glu	Tyr	Ala	Gly	Asp	Asn	Met	Ala	Lys	Asp	Lys		
65				70					75					80			
Ser	Ser	Thr	Asp	Ala	Phe	Phe	Asp	Phe	Ile	Ser	Tyr	Ser	Arg	Asp	Ala		
			85					90					95				
Asp	Asn	Tyr	Arg	Leu	Gln	Ser	Phe	Trp	Asp	Ser	Gly	Tyr	Lys	Ala	Ile		
		100					105					110					
Ala	Gln	Ala	Ser	Asn	Ile	Ile	Lys	Met	Ile	Asp	Glu	Gly	Lys	Ser	Lys		
		115					120					125					
Ile	Ile	Asp	Tyr	Gln	Leu	Gly	Glu	Cys	Tyr	Tyr	Ile	Arg	Gly	Met	Met		
	130					135					140						
Tyr	Phe	Tyr	Leu	Gly	Arg	Ala	Phe	Gly	Arg	Pro	Tyr	Trp	Asp	Lys	Pro		
145				150					155					160			
Glu	Gly	His	Met	Gly	Val	Pro	Ile	Val	Asn	Gly	Thr	Pro	Asp	Asp	Val		
			165					170					175				
Asn	Asn	Leu	Asn	Leu	Pro	Asp	Arg	Ser	Thr	Val	Gln	Asp	Thr	Tyr	Glu		
		180				185							190				
Gln	Ala	Ile	Asp	Asp	Leu	Lys	Val	Ala	Ala	Arg	Leu	Met	Glu	Asn	Gly		
		195				200						205					
Glu	Thr	Lys	Arg	Glu	Gly	Pro	Ala	Tyr	Ala	Ser	Lys	Glu	Ala	Ala	Trp		
	210					215					220						
Ala	Met	Leu	Ser	Arg	Ile	Tyr	Leu	Phe	Met	Ser	Gly	Thr	Tyr	Glu	Ala		
225				230					235					240			
Pro	Asn	Ser	Glu	Asn	Ala	Gln	Leu	Ala	Ile	Asp	Tyr	Ala	Thr	Arg	Val		
			245					250						255			
Ile	Glu	Ser	Thr	Ser	Glu	Gly	Gly	Leu	Lys	Tyr	Glu	Leu	Leu	Ser			
		260				265						270					
Arg	Glu	Asn	Phe	Met	Arg	Tyr	Asn	Thr	Phe	Met	Pro	Glu	Asn	Asn	Lys		
		275				280						285					
Glu	Ser	Ile	Phe	Val	Val	Lys	Ile	Met	Ala	Ser	Glu	Lys	Pro	Asp	Tyr		

290 295 300
 Trp Asn Ser Ile Gly Gly Met Tyr Ser Tyr Ala Gly Gln Gln Gly Trp
 305 310 315 320
 Gly Glu Met Tyr Ala Ser Ala Lys Tyr Met Asp Leu Leu Asn Glu Gln
 325 330 335
 Gly Arg Asn Asp Trp Arg Pro Asp Lys Lys Lys Ile Val Asp Ala Arg
 340 345 350
 Ala Asn Phe Ile Ser Pro Ser Tyr Ile Thr Asp Ser Asp Gly Lys Tyr
 355 360 365
 Val Glu Val Phe Arg Phe Ile Lys Asn Val Tyr Asn Lys Asn Asn Ile
 370 375 380
 His Thr Gly Tyr Thr Tyr Val Gln Leu Pro Ile Ser Lys Arg Gly Asn
 385 390 395 400
 Thr Val Thr Cys Lys Glu Gly Glu Thr Asn Tyr Thr Leu Ser Leu Ile
 405 410 415
 Asn Ser Ser Glu Glu Lys Tyr Ser Ile Asn Tyr Ser Asp Gly Gln Thr
 420 425 430
 Tyr Ser Gly Val Ile Asp Tyr Glu Ile Glu Leu Ser Ser Gly Gln Pro
 435 440 445
 Lys Phe Tyr Ile Leu Lys Cys Ser Asn Glu Gly Thr Ala Ser Gly Glu
 450 455 460
 Ala Glu Ser Gln Leu His Ser Pro Val Ile Ser Arg Leu Gly Glu Val
 465 470 475 480
 Tyr Leu Asn Arg Ala Glu Ala Tyr Ala Lys Lys Gly Asp Tyr Ser His
 485 490 495
 Ala Gln Ala Asp Leu Asn Ile Ile Arg Glu Arg Ser Leu Pro Gly Arg
 500 505 510
 Gly Tyr Asn Asp Leu Asn Ala Ser Asn Ala Lys Val Arg Ile Glu Lys
 515 520 525
 Glu Arg Gln Leu Glu Leu Ala Tyr Gln Ala Glu Arg Ser Tyr Asp Val
 530 535 540
 Phe Arg Asn Cys Glu Thr Leu Thr Arg Lys Tyr Pro Gly Val His Asp
 545 550 555 560
 Ala Met Leu Glu Ile Pro Ala Thr Asp Tyr Arg Val Ile Tyr Phe Ile
 565 570 575
 Pro Gln Ser Ala Ile Asn Ser
 580

<210> 9398

<211> 1128

<212> PRT

<213> B.fragilis

<400> 9398

Ser Ser Thr Gly Phe Leu Lys Asp Asp Val Tyr Tyr Leu Leu Asn Leu
 1 5 10 15
 Asn Tyr Asn Leu Ile Ile Met Val Phe Met Lys Lys Cys Asn Gln Lys
 20 25 30
 Trp Phe Asn Pro Gln Lys Val Lys Lys Gln Ile Ala Ile Ala Val Ala
 35 40 45
 Ile Ser Leu Val Cys Ala Ile Pro Ile Ser Thr Phe Ala Gln Val Leu
 50 55 60
 Lys Phe Ser Ile Lys Lys Ser Asn Thr Ser Ile Gln Ser Val Leu Gln
 65 70 75 80
 Glu Leu Glu Lys Glu Ser Gly Tyr Thr Phe Phe Tyr Asn Asp Asn Gln
 85 90 95
 Val Lys Leu Asp Lys Lys Ile Ser Ile Asn Ile Glu Asp Ala Ser Ile
 100 105 110
 Glu Val Val Leu Asn Gln Ile Phe Glu Asn Leu Gly Tyr Ser Tyr Arg

[illegible]

Glu	Gly	Val	Asp	Gly	Arg	Met	Arg	Glu	Tyr	Gln	Thr	Thr	Thr	Val	Arg
		595					600					605			
Arg	Tyr	Ser	Asn	His	Ile	Ile	Arg	Phe	Asn	Lys	Met	Phe	Gly	Lys	His
	610					615					620				
Ser	Ile	Asn	Ala	Leu	Ala	Ala	Tyr	Glu	Phe	Asn	Asp	Tyr	Trp	Ala	Lys
625					630					635					640
Ala	Thr	Asp	Met	Tyr	Gly	Ile	Gly	Phe	Ile	Pro	Gly	Phe	Glu	Val	Leu
				645					650					655	
Asp	Val	Val	Ala	Lys	Pro	Glu	Lys	Val	Gly	Gly	Ser	Ile	Ser	Glu	Trp
			660					665					670		
Ala	Val	Gln	Ser	Leu	Leu	Phe	Asn	Ala	Asn	Tyr	Ala	Phe	Asp	Asn	Lys
		675					680					685			
Tyr	Leu	Ala	Gln	Leu	Ser	Phe	Arg	Arg	Asp	Gly	Ala	Ser	Asn	Phe	Gly
	690					695					700				
Asp	Asn	Ala	Lys	Tyr	Gly	Asn	Phe	Phe	Ser	Ile	Ser	Ala	Gly	Trp	Asn
705					710					715					720
Ile	Asn	Arg	Glu	Lys	Trp	Phe	His	Ala	Ser	Trp	Val	Asp	Ile	Leu	Lys
				725						730				735	
Leu	Arg	Ile	Ser	Tyr	Gly	Ser	Val	Gly	Asn	Arg	Pro	Ser	Ser	Leu	Tyr
			740					745					750		
Pro	Gln	Tyr	Asp	Leu	Tyr	Ser	Val	Ser	Ser	Lys	Tyr	Asn	Glu	Glu	Ser
		755					760					765			
Gly	Ala	Leu	Ile	Ser	Gln	Leu	Gly	Asn	Lys	Asp	Leu	Thr	Trp	Glu	Lys
	770					775					780				
Thr	Tyr	Thr	Thr	Gly	Thr	Gly	Ile	Asp	Val	Ala	Phe	Phe	Asp	Asn	Arg
785					790					795					800
Leu	Arg	Ala	Ser	Phe	Asp	Trp	Tyr	Asn	Lys	Tyr	Thr	Ser	Asn	Ile	Leu
				805					810					815	
Tyr	Ala	Val	Pro	Ile	Ser	Gly	Leu	Val	Gly	Val	Thr	Ser	Met	Trp	Lys
			820					825					830		
Asn	Ile	Gly	Glu	Met	Gln	Asn	Gln	Gly	Phe	Glu	Leu	Ser	Ile	Gly	Gly
		835					840					845			
Asp	Ile	Ile	Arg	Thr	Lys	Asp	Trp	Asp	Trp	Asn	Ile	Glu	Ile	Asn	Leu
	850					855					860				
Gly	His	Asn	Lys	Asn	Lys	Leu	Lys	Lys	Leu	Tyr	Lys	Thr	Lys	Asn	Ala
865					870					875					880
Glu	Gly	Gln	Phe	Val	Glu	Lys	Pro	Ile	Ile	Ile	Ser	Asp	Gly	Thr	Ser
				885					890					895	
Ile	Ala	Gly	Thr	Ala	Lys	Arg	Val	Leu	Gln	Pro	Gly	Tyr	Pro	Cys	Asp
			900					905					910		
Thr	Tyr	Tyr	Leu	Lys	Glu	Trp	Ala	Gly	Val	Asn	Pro	Glu	Asn	Gly	Ala
		915					920					925			
Pro	Gln	Trp	Tyr	Lys	Thr	Val	Glu	Asn	Glu	Asp	Gly	Thr	Leu	Ser	Arg
		930				935					940				
Gln	Lys														

1060	1065	1070
Ile Asn Asn Met Arg Ile Phe Phe Thr Gly Glu Asn Leu Phe Cys Val		
1075	1080	1085
Thr Asn Tyr Ser Gly Val Asp Pro Glu Ile Pro Ala Ser Asp Gly Ser		
1090	1095	1100
Val Ile Gly Thr Ala Leu Pro Ser Val Tyr Pro Thr Val Arg Lys Phe		
1105	1110	1115
Met Phe Gly Leu Asn Leu Thr Phe		1120
1125		

<210> 9399
 <211> 496
 <212> PRT
 <213> B.fragilis

<400> 9399

Ala Ala Leu Ile Met Arg Lys Tyr Phe Pro Tyr Ile Leu Phe Ile Phe			
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Leu Phe Phe Ile Tyr Phe Leu Cys Tyr Gln Ser Val Leu Ser His Val			
20	25	30	
Ile Tyr Tyr Gln Glu Gln His His Leu Phe Leu Tyr Ser Lys Thr Phe			
35	40	45	
Phe Leu Gln His Ile Gln Ser Gln Gly Trp Met Ser Tyr Leu Thr Ala			
50	55	60	
Phe Ile Ile Gln Phe Phe His Ile Pro Thr Ile Gly Ser Ile Leu Leu			
65	70	75	80
Ala Gly Ile Leu Ala Leu Ile Tyr Leu Leu Thr Asn Asp Ala Ile Lys			
85	90	95	
Lys Ile Thr Gly His Asn Asp Leu Leu Leu Leu Ser Leu Ile Pro Ser			
100	105	110	
Ile Tyr Leu Phe Leu Tyr Ser Met Thr Val Asp His Ser Leu Thr Pro			
115	120	125	
Ile Ile Ala Thr Phe Leu Gly Leu Leu Ile Met Gly Leu Phe His Gln			
130	135	140	
Ile Thr Val Arg Pro Trp Ser Phe Ile Arg Lys Ile Tyr Ser Pro Leu			
145	150	155	160
Pro Pro Asn Asn Lys Tyr Arg Leu Leu Ile Tyr Ser Leu Leu Ile Ala			
165	170	175	
Ile Tyr Ala Gly Thr Ser Phe Tyr Phe Phe Val Gln Thr Tyr Asn Met			
180	185	190	
Ser Glu His Arg Met Ile Met Ala Glu Lys Ser Val Lys Glu Lys Asn			
195	200	205	
Trp Glu Asn Val Leu Thr Gln Thr Glu Lys Tyr Ile Asn Ser Gly Arg			
210	215	220	
Thr Asn Gln Leu Ile Ser Tyr Phe His Asn Leu Ala Leu Tyr His Thr			
225	230	235	240
Glu Lys Leu Pro Tyr Gln Leu Phe Asp Tyr Pro Gln Lys Leu Gly Val			
245	250	255	
Lys Ala Leu Tyr Phe Pro Trp Asn Ser Asp Ser Arg Glu Ser Glu Tyr			
260	265	270	
Gly His Phe Ile Tyr Glu Asp Leu Gly Tyr Ile Asn Glu Ala Gln Arg			
275	280	285	
Trp Glu Phe Glu Ala Met Val Val Trp Gly Glu Thr Ala Pro His Leu			
290	295	300	
Leu Asn Leu Ala Arg Tyr Asn Ile Val Asn Lys Arg Pro Glu Val Ala			
305	310	315	320
Arg Arg Phe Ile Asn Leu Leu Lys Gln Ser Leu Phe Tyr Arg Lys Asp			
325	330	335	
Ala Glu Glu Leu Glu Lys Gln Leu His Ala Gly Ser Val Pro Gly Leu			

	340		345		350
Arg Met	Ala Leu Glu Asn Asn Lys Glu His Pro Ala Arg Phe Ala Asn				
	355		360		365
Val Ile Asn Ile Gly Pro Glu Leu Gln Tyr Leu Cys Glu Gln Asp Thr					
	370		375		380
Thr Asn Arg Met Ala Phe Glu Tyr Leu Met Ser Asp Leu Leu Leu Ser					
	385		390		395
Asn Asn Val Val Arg Phe Val Asp Asn Leu Lys Phe Ile Arg His Phe					
	405		410		415
Lys Tyr Pro Glu Met Pro Pro Ala Tyr Gln Glu Ala Leu Tyr Ile Tyr					
	420		425		430
Lys Leu Gly Val Asp Gly Glu Thr Phe Ser Lys Ser Gly Phe Asn Val					
	435		440		445
Ser Glu Asn Thr Glu Lys Arg Phe Gln Arg Tyr Tyr Asn Leu Tyr Lys					
	450		455		460
Asn Arg Gln Met Gln Arg Leu Lys Ala Glu Phe Gly Asn Thr Tyr Trp					
	465		470		475
Tyr Tyr Leu Asn Phe Ile Ser Pro Tyr Gly Asp Lys Ile Ile Arg Asn					
	485		490		495

<210> 9400

<211> 648

<212> PRT

<213> B.fragilis

<400> 9400

Leu Ile Val Phe Met Arg Lys Cys Asn Met Arg Trp Phe Ser Pro Gln			
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Arg Met Lys Lys His Leu Ala Phe Ala Leu Ala Val Ser Leu Val Ala			
	20	25	30
Met Val Pro Val Ser Ala Phe Ala Gln Val Leu Lys Ile Ser Met Thr			
	35	40	45
Lys Thr Asn Val Ser Ile Glu Asn Val Leu Arg Glu Leu Glu Lys Gln			
	50	55	60
Ser Asp Tyr Thr Phe Phe Tyr Asn Asp Asn Gln Val Lys Leu Asn Lys			
	65	70	75
Lys Val Ser Ile Asn Val Ser Asp Ala Pro Ile Glu Thr Val Leu Asn			
	85	90	95
Glu Val Phe Lys Asn Ser Gly Tyr Thr Tyr Lys Ile Val Asp Asn Gln			
	100	105	110
Ile Val Val Ser Thr Ala Ala Ala Lys Glu Val Gln Ala Thr			
	115	120	125
Gln Gln Gln Lys Gln Arg Asn Ile Ser Gly Val Val Lys Asp Ala Met			
	130	135	140
Gly Glu Ala Ile Ile Gly Ala Ser Val Ile Glu Lys Gly Asn Pro Thr			
	145	150	155
Asn Gly Thr Ile Thr Asp Ile Asn Gly Lys Phe Ser Leu Asn Val Gly			
	165	170	175
Gly Asn Glu Leu Gln Ile Thr Tyr Ile Gly Tyr Met Pro Glu Thr Val			
	180	185	190
Ser Leu Lys Thr Gly Val Ala Ser Tyr Asn Ile Ile Met Lys Glu Asp			
	195	200	205
Thr Lys Thr Leu Asp Glu Val Val Val Val Gly Tyr Gly Val Gln Lys			
	210	215	220
Lys Ala Asn Leu Thr Gly Ser Val Ala Ser Ile Ser Ala Asp Ala Leu			
	225	230	235
Glu Ser Arg Ser Val Ala Ser Val Ser Ala Ala Leu Ala Gly Gln Ile			
	245	250	255
Pro Gly Val Thr Ser Ile Gln Thr Ser Gly Ala Pro Gly Ser Gln Thr			

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[illegible]

<400> 9401
Leu Ile Val Phe Met Lys Lys Cys Asn Leu Arg Trp Phe Ser Pro Gln
1 5 10 15
Lys Ile Lys Arg Gln Leu Ala Phe Val Leu Ala Ile Cys Leu Val Cys

Table 1

Phe	Ser	Met	Val	Pro	Val	Thr	Phe	Val	Ala	Lys	Gln	Ser	Asn	Gly	Asp
			500					505					510		
Trp	Gly	Thr	Val	Asn	Gly	Gly	Gln	Thr	Ala	Thr	Ser	Asn	Phe	Ile	Thr
			515				520					525			
Gly	Asn	Pro	Leu	Arg	Ala	Leu	Ser	Lys	Lys	Asp	Trp	Ser	Lys	Ser	Lys
			530				535				540				
Ser	Glu	Asn	Thr	Met	Tyr	Asp	Leu	Gly	Phe	Asp	Ile	Lys	Pro	Val	Lys
545						550				555					560
Gly	Leu	Ile	Ile	Ser	Gly	Gln	Gly	Val	Phe	Lys	Gly	Tyr	Glu	Tyr	Lys
				565					570						575
Ser	Lys	Ser	Tyr	Thr	Ala	Leu	Gln	Pro	Asn	Ala	Ile	Asn	Tyr	Phe	Ser
				580				585					590		
Gly	Glu	Glu	Ile	Ala	Gly	Thr	Gly	Val	Thr	Lys	Asn	Lys	Met	Ser	Met
			595				600					605			
Asp	Trp	Gln	Ser	Thr	Asn	Thr	Met	Leu	Tyr	Thr	Ala	Thr	Ala	Arg	Tyr
			610				615				620				
Asp	Trp	Ser	Asn	Asp	Lys	His	Ala	Val	Gly	Ala	Leu	Val	Gly	Thr	Ser
625						630				635					640
Tyr	Glu	His	Tyr	Lys	Tyr	Glu	Arg	Leu	Ala	Gly	Ser	Arg	Glu	Glu	Phe
				645						650					655
Pro	Ser	Asp	Ala	Leu	Thr	Asp	Met	Glu	Ala	Gly	Ser	Thr	Ser	Gly	Ala
			660					665					670		
Gly	Tyr	Thr	Asn	Gly	Ala	Gly	Ser	Ser	Glu	Tyr	Lys	Met	Leu	Ser	Tyr
			675				680					685			
Phe	Ala	Arg	Val	Asn	Tyr	Thr	Leu	Met	Asp	Arg	Tyr	Leu	Phe	Glu	Val
			690				695				700				
Asn	Met	Arg	Ala	Asp	Ala	Ser	Ser	Arg	Phe	His	Lys	Asp	His	Arg	Trp
705					710					715					720
Gly	Tyr	Phe	Pro	Ser	Phe	Ser	Ala	Gly	Trp	Arg	Met	Ser	Glu	Glu	Ser
				725				730							735
Phe	Met	Lys	Asp	Ile	Glu	Trp	Ile	Asn	Asn	Leu	Lys	Ile	Arg	Ala	Ser
			740					745					750		
Tyr	Gly	Thr	Leu	Gly	Asn	Ile	Asn	Asn	Val	Gly	Asn	Tyr	Asp	Tyr	Phe
			755				760					765			
Gln	Asn	Tyr	Ser	Ser	Gly	Asn	His	Tyr	Ser	Phe	Ser	Asp	Ser	Pro	Val
			770				775					780			
Ile	Gly	Ile	Gly	Glu	Ser	Lys	Pro	Ala	Asn	Glu	Thr	Leu	Gly	Trp	Glu
785						790				795					800
Lys	Val	Ala	Leu	Thr	Asp	Ile	Gly	Leu	Asp	Phe	Asp	Ile	Phe	Asn	Gly
				805					810					815	
Leu	Leu	Gly	Val	Thr	Ala	Asp	Tyr	Tyr	Ile	Lys	Asn	Thr	Ser	Asp	Ile
			820					825					830		
Leu	Leu	Gly	Tyr	Asn	Val	Pro	Thr	Glu	Thr	Gly	Ile	Thr	Ala	Ala	Pro
			835				840					845			
Ser	Gln	Asn	Ile	Gly	Lys	Val	Lys	Asn	Thr	Gly	Phe	Glu	Leu	Ala	Leu
			850				855				860				
Asn	His	Arg	Asn	Lys	Ile	Gly	Ala	Val	Asn	Tyr	Ser	Ile	Gly	Ala	Asn
865						870				875					880
Ile	Ala	Thr	Asn	Lys	Asn	Lys	Ile	Thr	Asn	Leu	Gly	Gly	Ser	Asp	Asn
				885					890					895	
Ile	Ile	Gln	Thr	Ser	Ser	Tyr	Ile	Val	Lys	Tyr	Ile	Leu	Lys	Lys	Gly
			900					905					910		
Glu	Ser	Ile	Gly	Ser	Phe	Tyr	Gly	Phe	Lys	Thr	Asp	Gly	Leu	Tyr	Thr
			915				920					925			
Gln	Ala	Asp	Ile	Asp	Ala	Gly	His	Tyr	Tyr	Thr	Leu	Ser	Gly	Val	Val
			930				935					940			
Pro	Asn	Ala	Gly	Asp	Ile	Lys	Phe	Val	Pro	Gln	Arg	Asp	Ile	Glu	Tyr
945						950				955					960
Lys	Gln	Glu	Ile	Thr	Asp	Glu	Asp	Arg	Thr	Ile	Leu	Gly	Lys	Asp	Val

1000
 900
 800
 700
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 500
 400
 300
 200
 100
 0

Pro	Asp	Phe	Thr	Tyr	Gly	Val	Asn	Leu	Ser	Leu	Gln	Tyr	Lys	Gly	Phe	965	970	975
			980					985					990					
Glu	Phe	Ser	Met	Phe	Gly	Gln	Gly	Ile	Ser	Gly	Thr	Lys	Val	Ala	Phe			
		995					1000					1005						
Asp	Val	Tyr	Gly	Val	His	Pro	Phe	Tyr	His	Gly	Gln	Asp	Ser	Pro	Arg			
	1010					1015					1020							
Lys	Tyr	His	Leu	Lys	Arg	Trp	Thr	Glu	Glu	Asn	Pro	Asn	Pro	His	Ala			
1025				1030						1035					1040			
Ala	Tyr	Pro	Arg	Ile	Tyr	Ser	Ala	Ser	Ser	Val	His	Thr	Thr	Tyr	Asn			
			1045					1050						1055				
Arg	Asn	Phe	Ser	Asp	Tyr	His	Leu	Phe	Asp	Ser	Asp	Tyr	Phe	Arg	Phe			
		1060						1065					1070					
Lys	Thr	Leu	Ser	Leu	Gly	Tyr	Thr	Val	Pro	Ser	Ala	Thr	Val	Lys	Asn			
	1075					1080						1085						
Trp	Gly	Leu	Gln	Ser	Leu	Lys	Val	Tyr	Val	Thr	Gly	Glu	Asn	Leu	Phe			
	1090				1095						1100							
Thr	Val	Arg	Ala	Asp	Lys	Lys	Met	Glu	Asp	Phe	Asp	Pro	Glu	Thr	Ala			
1105				1110						1115				1120				
Gly	Gly	Val	Ile	Tyr	Thr	Leu	Gly	Thr	Lys	Ser	Val	Ala	Phe	Gly	Val			
			1125					1130					1135					
Asn	Ile	Ser	Phe															
			1140															

<210> 9402

<211> 591

<212> PRT

<213> B.fragilis

<400> 9402

Lys	Ile	Glu	Phe	Thr	Met	Lys	Asn	Asn	Ile	Arg	Lys	Ile	Ala	Leu	Gly	1	5	10	15
Leu	Cys	Leu	Thr	Gly	Ala	Leu	Thr	Ala	Cys	Asp	Leu	Asp	Val	Val	Pro	20	25	30	
Pro	Ala	Asp	Ile	Ala	Ala	Glu	Asn	Phe	Trp	Gln	Thr	Glu	Lys	Asp	Ala	35	40	45	
Trp	Tyr	Ala	Leu	Asn	Thr	Cys	Tyr	Ala	Thr	Leu	Asp	Gly	Val	Asp	Ile	50	55	60	
Trp	Asp	Glu	Leu	Cys	Thr	Asp	Asn	Ala	His	Ser	His	Lys	Pro	Trp	Glu	65	70	75	80
Gly	Asn	Phe	Glu	Met	Val	Gln	Gln	Asn	Gly	Ile	Ser	Thr	Ala	Asn	Gly	85	90		95
Tyr	Gly	Ser	Tyr	Tyr	Phe	Gly	Thr	Val	Arg	Ile	Val	Asn	Asn	Phe	Ile	100	105		110
Ala	Asn	Ile	Asp	Lys	Cys	Ala	Val	Ser	Glu	Glu	Leu	Lys	Thr	Arg	Met	115	120		125
Lys	Ala	Glu	Ala	Arg	Phe	Phe	Arg	Ala	Leu	Ser	Tyr	Leu	Asp	Leu	Thr	130	135		140
Thr	Lys	Phe	Gly	Lys	Val	Pro	Val	Ile	Thr	Glu	Val	Leu	Ala	Tyr	Asp	145	150	155	160
Ala	Pro	Asn	Val	Lys	Arg	Asp	Glu	Val	Glu	Thr	Val	Arg	Lys	Phe	Ile	165	170		175
Leu	Asp	Glu	Leu	Ala	Glu	Ile	Ala	Glu	Ile	Leu	Pro	Asp	Ser	Tyr	Asn	180	185		190
Gly	Ser	Tyr	Leu	Tyr	Glu	Thr	Gly	Arg	Ile	Thr	Arg	Ala	Gly	Ala	Leu	195	200		205
Ala	Leu	Arg	Ala	Arg	Ala	Ala	Leu	Tyr	Phe	Gly	Asn	Tyr	Ala	Glu	Ala	210	215		220
Glu	Ala	Ser	Ala	Gly	Lys	Ile	Ile	Ser	Glu	Gly	His	His	Ser	Leu	Phe				

225					230					235				240
Arg	Val	Ser	Ser	Leu	Thr	Thr	Ala	Gln	Gln	Lys	Glu	Ala	Asp	Glu
				245					250					255
Asp	Ala	Tyr	Ile	Asp	Tyr	Ala	Thr	Lys	Gly	Ile	Asp	Lys	Asp	Lys
			260					265					270	
Val	Lys	Gly	Met	Phe	Ser	Tyr	Glu	Ser	Leu	Trp	His	Lys	Gly	Asn
		275					280					285		
Ser	Pro	Ala	Asn	Pro	Glu	Tyr	Ile	Val	Thr	Arg	Glu	Tyr	Met	Ala
	290					295					300			
Ala	Asn	Asn	Tyr	Asp	Trp	Thr	Arg	Tyr	Thr	Tyr	Phe	Ile	Pro	Lys
305					310					315				320
Phe	Ser	Gln	Tyr	Asp	Gly	Tyr	Cys	Ser	Tyr	Glu	Pro	Met	Gln	Asp
				325					330					335
Ile	Asp	Ala	Tyr	Trp	Asp	Val	Asp	Gly	Lys	Thr	Met	Arg	Asn	Asp
		340						345					350	
Thr	Met	Glu	Gln	Arg	Lys	Glu	Arg	Tyr	Ala	Glu	Ile	Trp	Lys	Asp
	355						360					365		
Lys	Asp	Met	Ser	Gln	Ser	Gln	Phe	Ile	Glu	Lys	Val	Pro	Gln	Thr
	370					375					380			
Ile	Met	Lys	Tyr	Asp	Tyr	Met	Lys	Glu	Phe	Arg	Asn	Arg	Asp	Ser
385					390					395				400
Leu	Tyr	Val	Ser	Met	Phe	Pro	Phe	Lys	Gly	Trp	His	Glu	Thr	Ile
			405					410						415
Lys	Gly	Thr	Phe	Tyr	Phe	Arg	Trp	Asp	Pro	Asp	Leu	Ile	Asn	Lys
		420						425					430	
Gly	Asn	Glu	Ser	Trp	Thr	Gly	Tyr	Phe	Tyr	Arg	Lys	Met	Val	Thr
	435					440						445		
Asp	Pro	Tyr	Asp	Thr	Trp	Thr	Ala	Glu	Glu	Asp	Tyr	Pro	Val	Ile
	450					455				460				
Tyr	Ala	Glu	Val	Leu	Leu	Thr	Tyr	Ala	Glu	Ala	Arg	Ile	Gln	Asn
465					470					475				480
Gly	Trp	Asp	Thr	Glu	Val	Gln	Lys	Ala	Leu	Asn	Asp	Leu	Arg	Asp
			485						490					495
Cys	Gly	Met	Pro	Asp	Val	Pro	Thr	Thr	Met	Pro	Ser	Lys	Glu	Glu
		500						505					510	
Leu	Ala	Phe	Val	Arg	Asn	Glu	Arg	Arg	Ile	Glu	Leu	Ala	Ala	Glu
	515						520					525		
His	Arg	Phe	Asp	Asp	Ile	Arg	Arg	Tyr	Gly	Asn	Asp	Tyr	Cys	Ser
	530					535					540			
Ala	Met	Asn	Gly	Pro	Ser	Tyr	Ala	Pro	Asn	Gly	Tyr	Val	Val	Ile
545					550					555				560
Lys	Val	Trp	Asp	Asn	Arg	Leu	Met	Leu	Met	Pro	Ile	Pro	Gln	Gly
			565					570						575
Ile	Asp	Leu	Asn	Pro	Leu	Leu	Lys	Asp	Asp	Gln	Asn	Pro	Gly	Tyr
		580						585					590	

<210> 9403

<211> 169

<212> PRT

<213> B.fragilis

<400> 9403

Leu	Gly	Met	Phe	Asp	Ile	His	Phe	Val	Thr	His	Asp	Gln	Leu	Thr	Glu
1				5					10					15	
Ile	Ile	Leu	Leu	Glu	Val	Ile	Arg	Leu	Lys	Ser	Ser	Ala	Trp	Asn	Tyr
		20					25						30		
Ser	Tyr	Glu	Asp	Gln	Val	Ser	Trp	Ile	Asn	Thr	His	Ile	Lys	Asp	Ser
	35					40					45				
Asp	Leu	His	Cys	Phe	Leu	Ser	Glu	Asp	Gly	Val	Asn	Val	Gly	Tyr	Leu

50 55 60
 Asn Leu Ile Glu Thr Asn Ile Ile Val Asp Asp Leu Ser Tyr Arg Ala
 65 70 75 80
 Tyr Gly Val Gly Asn Val Cys Ser Ile Val Arg Lys Lys Gly Tyr Gly
 85 90 95
 Ser Ile Leu Leu Asn Tyr Val Asn Asp Phe Ile Val Asn Lys Glu Tyr
 100 105 110
 Ile Gly Val Leu Leu Cys Lys Pro Glu Leu Ser His Phe Tyr Asn Lys
 115 120 125
 Ser Gly Trp Lys Leu Val Pro Tyr Leu Lys Leu Leu Cys Glu Phe Ser
 130 135 140
 Leu Thr Asn Ile Glu Met Met Thr Tyr Asn Cys Glu Phe Asn Tyr Lys
 145 150 155 160
 Gln Ile Ile Tyr Lys Gly Gly Pro Phe
 165

<210> 9404
 <211> 87
 <212> PRT
 <213> B.fragilis

<400> 9404
 Asn Val Val Pro Leu Pro Asp Leu Leu Arg Val Gln Glu Asn Leu Tyr
 1 5 10 15
 Val Val Pro Cys Glu Gln Val Arg Arg Cys Cys Asn Phe Tyr Glu Asp
 20 25 30
 Cys Leu Asn Ala Gly Gly Thr Glu Gln Glu Arg Gly Tyr Gly Arg Ser
 35 40 45
 Ile Leu Lys Asp Phe Ser Asn Asp Ala Gln Ile Lys Ser Leu Gln Ser
 50 55 60
 Asp Gly Tyr Asn Val Tyr Met Tyr Leu Asp Asp Glu Leu Ile Glu Val
 65 70 75 80
 Pro Pro Cys Pro Cys Ala Glu
 85

<210> 9405
 <211> 161
 <212> PRT
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<400> 9405
 Val Met Asn Thr Leu Thr Ser Gln Ile Glu Gln Leu Gln Ser Leu Ala
 1 5 10 15
 His Glu Leu Leu Tyr Leu Gly Val Asp Gly Ala Pro Ile Tyr Thr Asp
 20 25 30
 His Phe Arg Gln Leu Asn Lys Glu Val Leu Glu Gln Ser Asp Ala Leu
 35 40 45
 Tyr Pro Gln Arg Gly Ala Thr Ser Glu Glu Glu Ala Asn Ile Cys Leu
 50 55 60
 Ala Leu Leu Met Gly Tyr Asn Ala Thr Ile Tyr Asn Gln Gly Asp Lys
 65 70 75 80
 Glu Glu Lys Lys Gln Val Val Leu Asn Arg Cys Trp Asp Val Leu Asp
 85 90 95
 Gln Leu Pro Ala Thr Leu Leu Lys Cys Gln Leu Leu Thr Tyr Cys Tyr
 100 105 110
 Gly Glu Val Phe Glu Glu Glu Leu Ala Lys Glu Ala His Thr Ile Ile
 115 120 125
 Glu Ser Trp Lys Asp Lys Glu Leu Ser Glu Asp Lys Lys Glu Ala Ile
 130 135 140

Asn Asn Leu Arg Asn Leu Glu Glu Asn Pro Tyr Pro Tyr Ser Glu Met
 145 150 155 160
 Glu

<210> 9406
 <211> 77
 <212> PRT
 <213> B.fragilis

<400> 9406
 Leu Pro Leu Thr Lys Glu Ile Asp Glu Val His Gln Tyr Pro Asn Val
 1 5 10 15
 Lys Leu Met Thr Glu Asp Ser Gln Tyr Lys His Glu Thr Tyr Leu Gln
 20 25 30
 Thr Asp Lys Leu Leu Leu Pro Leu Gln Tyr Ser His Tyr Thr Ile Ser
 35 40 45
 Cys Val Ile Leu Ala Leu Lys Tyr Gln Gln Glu Glu Asp Lys Val Ser
 50 55 60
 Leu Lys Val Ser Leu Leu Phe Ile Leu Phe Ile Tyr Thr
 65 70 75

<210> 9407
 <211> 94
 <212> PRT
 <213> B.fragilis

<400> 9407
 Leu Ser Arg Thr His Ile Leu Ser Val Ile Gly Leu Tyr Leu Gly Cys
 1 5 10 15
 Lys Asn Ser Ile Glu Leu Thr Phe Lys Ser Glu Lys Asp Ile Met Arg
 20 25 30
 Cys Ile Asp Thr Val Thr Ile Thr Ile Ser Lys Met Glu Ile Asp Leu
 35 40 45
 Pro Lys Ile Glu Ile Val Lys Gln Cys Gly Met Ile Ala Ala Asn Thr
 50 55 60
 Val Phe Leu Ile Asn Ser Leu Thr Ser Asn Ile Pro Tyr Met Phe Leu
 65 70 75 80
 Asp Arg Leu Arg Gly Val Lys Val Thr Trp Asp Lys Ile Lys
 85 90

<210> 9408
 <211> 76
 <212> PRT
 <213> B.fragilis

<400> 9408
 Ala Thr Asn Ala Leu Arg Ala Ala Gly Asp Val Asn Tyr Pro Phe Tyr
 1 5 10 15
 Val Gly Leu Val Val Met Trp Ser Val Ala Val Gly Ile Gly Tyr Leu
 20 25 30
 Phe Gly Ile Tyr Trp Ala Trp Gly Ile Cys Gly Met Trp Val Ala Phe
 35 40 45
 Ala Leu Asp Glu Asn Ile Arg Gly Ile Ile Phe Val Arg Arg Trp Tyr
 50 55 60
 Gly Met Lys Trp Val Asn Lys Ser Phe Val Arg Ser
 65 70 75

<210> 9409

<211> 85
 <212> PRT
 <213> B.fragilis

<400> 9409

Ala	Glu	Lys	Ala	Gly	Thr	Asn	Leu	Gln	Pro	Gln	Gly	Ile	Tyr	Lys	Asp
1			5					10						15	
Asn	Glu	Pro	Glu	Thr	Leu	Gly	Val	Ile	Gln	His	Leu	Arg	Ile	Asn	Gly
		20					25					30			
Gln	Ser	Glu	Val	Pro	Gly	Gln	Asn	Ala	Gly	Lys	Lys	Asp	Lys	Gly	Asn
		35				40						45			
Ala	Lys	Arg	Asn	Ala	Thr	Asn	Met	Asn	Phe	Ala	Gln	Ser	Glu	Pro	Asn
	50					55					60				
Gly	Gly	Asn	Gln	Gly	Lys	Asn	Asp	Asn	Cys	Leu	Gln	Ser	Arg	Met	Phe
65					70					75					80
Asp	Lys	Glu	Thr	Ile											
				85											

<210> 9410
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 <212> PRT
 <213> B.fragilis

<400> 9410

Ile	Met	Lys	Ala	Cys	Phe	Met	Gly	Leu	Gly	Tyr	Ile	Gly	Leu	Pro	Thr
1			5					10						15	
Ala	Ile	Ile	Ala	Ala	Lys	His	Gly	Ile	Gln	Ile	Thr	Gly	Val	Asp	Ile
		20					25					30			
Asn	Pro	Lys	Val	Val	Glu	Met	Thr	Asn	Leu	Gly	Lys	Leu	His	Ile	Ile
		35				40						45			
Glu	Pro	Gly	Met	Gln	Ala	Leu	Leu	Gln	Glu	Val	Val	Ser	Ser	Gly	Trp
	50					55					60				
Leu	Lys	Ala	Ser	Thr	Thr	Pro	Asp	Val	Ser	Asp	Ala	Tyr	Phe	Val	Val
65				70					75						80
Val	Pro	Thr	Pro	Phe	Lys	Gly	Asn	His	Glu	Pro	Asp	Ile	Ser	Tyr	Val
			85					90						95	
Glu	Thr	Ala	Thr	Arg	Ala	Val	Ile	Pro	Phe	Leu	Lys	Glu	Gly	Asp	Leu
		100					105						110		
Tyr	Val	Ile	Glu	Ser	Thr	Ser	Pro	Val	Gly	Thr	Thr	Asp	Lys	Met	Ala
	115						120					125			
Asp	Leu	Ile	Phe	Asp	Leu	Arg	Pro	Glu	Leu	Lys	Asp	Lys	Leu	Tyr	Ile
	130					135					140				
Ala	Tyr	Cys	Pro	Glu	Arg	Val	Leu	Pro	Gly	Asn	Val	Ile	Tyr	Glu	Leu
145					150					155					160
Val	His	Asn	Asp	Arg	Val	Ile	Gly	Gly	Ile	Asn	Glu	Ala	Ser	Thr	Asp
			165					170						175	
Lys	Ala	Ile	Glu	Phe	Tyr	Ser	His	Phe	Val	Gln	Gly	Thr	Leu	His	Arg
		180					185						190		
Thr	Asn	Cys	Lys	Thr	Ala	Glu	Met	Cys	Lys	Leu	Thr	Glu	Asn	Ser	Ser
	195					200						205			
Arg	Asp	Val	Gln	Ile	Ala	Phe	Ala	Asn	Glu	Leu	Ser	Leu	Ile	Cys	Asp
	210				215						220				
Lys	Ala	Gly	Ile	Asn	Val	Trp	Glu	Leu	Ile	Ser	Leu	Ala	Asn	Lys	His
225				230						235					240
Pro	Arg	Val	Asn	Ile	Leu	Gln	Pro	Gly	Cys	Gly	Val	Gly	Gly	His	Cys
			245						250					255	
Ile	Ala	Val	Asp	Pro	Tyr	Phe	Ile	Thr	Ser	Asn	Phe	Pro	Met	Glu	Ser
		260					265						270		
Lys	Ile	Ile	Ser	Thr	Ala	Arg	Glu	Ile	Asn	Asn	Tyr	Lys	Ala	Phe	Trp

275	280	285
Cys Ala Glu Lys Val Gln Asn Ser Met Leu Lys Phe Glu Leu Glu His		
290	295	300
His Arg Arg Pro Ala Ile Ala Met Met Gly Leu Ala Phe Lys Pro Asp		
305	310	315
Ile Asp Asp Leu Arg Glu Ala Pro Ala Lys Tyr Ile Thr Thr Lys Val		
	325	330
Met Gln Ser Cys Asn Asn Ala Asp Ile Met Val Val Glu Pro Asn Val		
	340	345
Gln Glu His Asn Val Phe Lys Leu Thr Asp Tyr Lys Glu Ala Tyr Thr		
	355	360
Lys Ala Asp Ile Val Val Phe Leu Val Ala His Thr Ser Phe Lys Ser		
	370	375
Leu Pro Tyr Asp Glu Thr Lys Val Ile Leu Asp Phe Cys Gly Ile Ser		
385	390	395
Lys Arg		400

<210> 9411

<211> 431

<212> PRT

<213> B.fragilis

<400> 9411

Tyr Asp Met Ala Lys Ile Gln Ile Lys Ser Glu Lys Leu Thr Pro Phe		
1	5	10
Gly Gly Ile Phe Ser Ile Met Glu Lys Phe Asp Ser Met Leu Ser Pro		
	20	25
Val Ile Asp Ser Thr Leu Gly Gln Arg Cys Ser Ser Ile Phe Gly Tyr		
	35	40
Gln Phe Ser Glu Ile Val Arg Ser Leu Met Ser Val Tyr Phe Cys Gly		
	50	55
Gly Ser Cys Val Glu Asp Val Thr Ser Gln Leu Met Arg His Leu Ser		
65	70	75
Tyr His Pro Thr Leu Arg Thr Cys Ser Ser Asp Thr Ile Leu Arg Ala		
	85	90
Ile Lys Glu Leu Thr Gln Glu Asn Ile Ser Tyr Thr Ser Asp Gln Gly		
	100	105
Lys Thr Tyr Asp Phe Asn Thr Ala Asp Lys Leu Asn Thr Leu Leu Ile		
	115	120
Asn Ala Leu Val Ser Thr Gly Glu Leu Lys Glu Ile Glu Glu Tyr Asp		
	130	135
Val Asp Phe Asp His Gln Phe Leu Glu Thr Glu Lys Tyr Asp Ala Lys		
145	150	155
Pro Thr Tyr Lys Lys Phe Leu Gly Tyr Arg Pro Gly Val Tyr Val Ile		
	165	170
Gly Asp Lys Ile Val Tyr Ile Glu Asn Ser Asp Gly Asn Thr Asn Val		
	180	185
Arg Phe His Gln Ala Asp Thr His Lys Arg Phe Phe Ala Leu Leu Glu		
	195	200
Ser Gln Asn Ile Arg Val Asn Arg Phe Arg Ala Asp Cys Gly Ser Cys		
	210	215
Ser Lys Glu Ile Val Ser Glu Ile Glu Lys His Cys Lys His Phe Tyr		
225	230	235
Ile Arg Ala Asn Arg Cys Ser Ser Leu Tyr Asn Asp Ile Phe Ala Leu		
	245	250
Arg Gly Trp Lys Thr Glu Glu Ile Asn Gly Ile Gln Phe Glu Leu Asn		
	260	265
Ser Ile Leu Val Glu Lys Trp Glu Gly Lys Cys Tyr Arg Leu Val Ile		
		270

275	280	285
Gln Arg Gln Arg Arg Asn Ser Gly Asp Leu Asp Leu Trp Glu Gly Glu		
290	295	300
Tyr Thr Tyr Arg Cys Ile Leu Thr Asn Asp Tyr Lys Ser Ser Thr Arg		
305	310	315
Asp Ile Val Glu Phe Tyr Asn Leu Arg Gly Gly Lys Glu Arg Ile Phe		
	325	330
Asp Asp Met Asn Asn Gly Phe Gly Trp Ser Arg Leu Pro Lys Ser Phe		
	340	345
Met Ala Glu Asn Thr Val Phe Leu Leu Thr Ala Leu Ile His Asn		
	355	360
Phe Tyr Lys Thr Ile Met Ser Arg Leu Asp Thr Lys Ala Phe Gly Leu		
	370	375
Lys Lys Thr Ser Arg Ile Lys Ala Phe Val Phe Arg Phe Ile Ser Val		
385	390	395
Pro Ala Lys Trp Ile Met Thr Ala Arg Gln Tyr Val Leu Asn Ile Tyr		
	405	410
Thr Glu Asn Arg Ala Tyr Ala Lys Pro Phe Lys Thr Glu Phe Gly		
	420	425
		430

<210> 9412

<211> 81

<212> PRT

<213> B.fragilis

<400> 9412

Ile Asn Ser Tyr Met Asn Asp Ile Phe Asp Glu Leu Val Ser Ser Asn		
1	5	10
Tyr Trp Asn Gly Lys Leu Pro Lys Val Glu Phe Ala Arg Lys Ser Tyr		
	20	25
Thr Asn Arg Ile Phe Gly Tyr Val Gly Asn Arg Leu Val Lys Val Leu		
	35	40
Thr Gly Gln Arg Gly Val Gly Lys Gly Cys Leu Leu Arg Gln Ile Ile		
	50	55
Tyr Gln Leu Met Arg Trp Gly Val Ser Ser Arg Asp His Ser Ile Tyr		
65	70	75
Lys		80

<210> 9413

<211> 278

<212> PRT

<213> B.fragilis

<400> 9413

Pro Ile Asn Gln Gln His Asn Asn Leu Thr Ile Met Ala Thr Thr Tyr		
1	5	10
Asp Gly Ile Asn Tyr Phe Pro Ile Ala Val Asn Phe Met Glu Glu Asn		
	20	25
Ala Met Glu Val Ile Glu Ala Lys Tyr Gly Met Lys Gly Leu Ala Ile		
	35	40
Val Leu Lys Leu Leu Cys Lys Ile Tyr Lys Glu Gly Tyr Tyr Ile Pro		
	50	55
Trp Gly Glu Glu Gln Cys Leu Ile Phe Ala Asn Lys Thr Gly Lys Glu		
65	70	75
Ala Asp Ala Glu Glu Val Gln Gly Ile Ile Glu Ile Met Ile Glu Lys		
	85	90
Gly Met Ile Asp Arg Gly Ser Tyr Ala Glu His Lys Val Leu Thr Ser		
	100	105
		110

Glu Ala Ile Gln Lys Val Trp Ile Glu Ala Thr Lys Arg Arg Lys Arg
 115 120 125
 Asn Trp Thr Ala Met Pro Tyr Leu Leu Ile Lys Pro Lys Glu Thr Cys
 130 135 140
 Asn Glu Glu Lys Thr Val Cys Thr Gln Asn Val Glu Gln Asp Ala Gly
 145 150 155 160
 Ser Asp Ala Lys Asn Ala Cys Asn Thr Glu Gln Ser Lys Val Lys Gln
 165 170 175
 Ser Arg Glu Phe Pro Pro Ser Ala Pro Pro Arg Gly Lys Glu Glu Glu
 180 185 190
 Val Asn Ala Thr Pro Val Ser Met Pro Gly Tyr Ala Phe Asn Thr Met
 195 200 205
 Thr His Asn Tyr Val Gly Leu Met Gly Asn Leu Glu Arg Phe Gly Ile
 210 215 220
 Thr Asp Glu Lys Glu Ile Glu Ala Ile Leu Arg Leu Ser Asp Tyr Gly
 225 230 235 240
 Arg Lys Gly Thr Pro Val Trp Lys Leu Ile Cys Ser Thr Asn Trp Ser
 245 250 255
 Asn Ile Gly Ala Lys Gly Lys Tyr Met Ile Ala Ala Leu Asn Arg Ala
 260 265 270
 Lys Lys Arg Ser Gly Thr
 275

<210> 9414
 <211> 174
 <212> PRT
 <213> B.fragilis

<400> 9414
 Met Ser Glu Gln Gln Lys Tyr Trp Phe Ala Ala Arg Thr Arg Asp Lys
 1 5 10 15
 Gln Glu Phe Ala Ile Arg Asp Ser Leu Glu Lys Leu Lys Thr Glu Leu
 20 25 30
 Asp Leu Asn Tyr Tyr Leu Pro Thr Gln Phe Val Ile Arg Gln Leu Lys
 35 40 45
 Tyr Arg Arg Lys Arg Val Glu Val Pro Val Ile Lys Asn Leu Ile Phe
 50 55 60
 Ile Gln Ala Thr Lys Gln Asp Ala Cys Asp Ile Ser Asn Lys Tyr Asn
 65 70 75 80
 Ile Gln Leu Phe Phe Pro Lys Asp Leu Leu Thr Arg Ala Met Leu Ile
 85 90 95
 Val Pro Asp Lys Gln Met Gln Asp Phe Ile Phe Val Met Asp Leu Asp
 100 105 110
 Pro Asn Gly Val Ser Phe Asp Asn Asp His Leu Ser Val Gly Ser Arg
 115 120 125
 Val Gln Val Val Lys Gly Asp Phe Cys Gly Val Glu Gly Glu Leu Ala
 130 135 140
 Ser Glu Ala Asn Lys Thr Tyr Val Val Ile Arg Ile Ala Gly Val Leu
 145 150 155 160
 Ser Ala Ser Val Lys Val Pro Lys Ser Tyr Leu Arg Val Ile
 165 170

<210> 9415
 <211> 565
 <212> PRT
 <213> B.fragilis

<400> 9415
 Leu Tyr Leu His Asn Leu Ser Ser Asn Val Gln Lys Thr Met Glu Gln

1	5	10	15
Ser Phe Ile Ala Tyr Ile Glu Asn Ser Ile Lys Asn Asn Trp Asp Leu			
20	25	30	
Asp Ala Leu Thr Asp Tyr Lys Gly Ala Thr Leu Gln Tyr Lys Asp Val			
35	40	45	
Ala Arg Lys Ile Glu Lys Leu His Ile Ile Phe Glu Ser Gly Ile			
50	55	60	
Arg Lys Gly Asp Lys Ile Ala Val Cys Gly Arg Asn Ser Ser His Trp			
65	70	75	80
Gly Val Thr Phe Leu Ala Thr Leu Thr Tyr Gly Ala Val Ile Val Pro			
85	90	95	
Ile Leu His Glu Phe Lys Ala Asp Asn Val His Asn Ile Val Asn His			
100	105	110	
Ser Glu Ala Lys Leu Leu Phe Val Gly Asp Val Val Trp Glu Asn Leu			
115	120	125	
Asn Glu Ser Ala Met Pro Leu Leu Glu Gly Ile Leu Met Met Asn Asp			
130	135	140	
Phe Thr Leu Leu Val Ser Arg Ser Glu Arg Leu Thr His Ala Arg Glu			
145	150	155	160
His Leu Asn Glu Met Phe Gly Lys Lys Phe Pro Lys Asn Phe Arg Lys			
165	170	175	
Glu His Ile Glu Tyr His Lys Asp Gln Pro Glu Glu Leu Ala Val Ile			
180	185	190	
Asn Tyr Thr Ser Gly Thr Thr Ser Tyr Ser Lys Gly Val Met Leu Pro			
195	200	205	
Tyr Arg Ser Leu Trp Ser Asn Thr Ala Phe Ala Phe Glu Val Leu Pro			
210	215	220	
Leu Lys Ala Gly Asp Lys Ile Val Ser Met Leu Pro Met Ala His Met			
225	230	235	240
Tyr Gly Leu Ala Phe Glu Phe Leu Tyr Glu Phe Ala Val Gly Cys Gln			
245	250	255	
Ile Tyr Phe Leu Thr Arg Met Pro Ser Pro Lys Ile Ile Phe Gln Ala			
260	265	270	
Phe Ala Asp Val Lys Pro Asn Leu Ile Val Ala Val Pro Leu Ile Ile			
275	280	285	
Glu Lys Ile Ile Lys Lys Ser Val Leu Pro Lys Leu Glu Thr Pro Thr			
290	295	300	
Met Lys Leu Leu Leu Lys Val Pro Ile Ile Asn Asp Lys Ile Lys Ala			
305	310	315	320
Thr Val Arg Glu Glu Met Ile Lys Gly Phe Gly Gly Asn Phe Glu Ala			
325	330	335	
Val Ile Val Gly Gly Ala Ala Phe Asn Gln Glu Val Glu Gln Phe Leu			
340	345	350	
Arg Met Ile Asp Phe Pro Tyr Thr Val Gly Tyr Gly Met Thr Glu Cys			
355	360	365	
Gly Pro Ile Ile Cys Tyr Glu Asp Trp Lys Arg Phe Lys Pro Gly Ser			
370	375	380	
Cys Gly Lys Ala Ala Leu Asn Met Glu Val Lys Val Leu Ser Pro Asp			
385	390	395	400
Pro Glu Asn Val Val Gly Glu Ile Val Cys Lys Gly Pro Asn Val Met			
405	410	415	
Leu Gly Tyr Tyr Lys Asn Glu Glu Ala Thr Ala Gln Val Ile Asp Lys			
420	425	430	
Asp Gly Trp Leu His Thr Gly Asp Leu Ala Leu Glu Asp Ala Glu Gly			
435	440	445	
Asn Ile Thr Ile Lys Gly Arg Ser Lys Asn Met Leu Leu Ser Ala Ser			
450	455	460	
Gly Gln Asn Ile Tyr Pro Glu Glu Ile Glu Asp Lys Leu Asn Asn Leu			
465	470	475	480

Pro Tyr Val Ala Glu Ser Ile Ile Val Gln Gln Asn Asp Lys Leu Val
 485 490 495
 Gly Leu Val Tyr Pro Asp Phe Asp Glu Ala Phe Ala His Gly Leu Lys
 500 505 510
 Asn Glu Asp Met Glu Arg Val Met Glu Glu Asn Arg Val Thr Leu Asn
 515 520 525
 Glu Met Leu Pro Ala Tyr Ser Gln Ile Ser Lys Met Lys Ile Tyr Pro
 530 535 540
 Glu Glu Phe Glu Lys Thr Pro Lys Lys Ser Ile Lys Arg Phe Leu Tyr
 545 550 555 560
 Gln Glu Ala Lys Gly
 565

<210> 9416
 <211> 72
 <212> PRT
 <213> B.fragilis

<400> 9416
 Leu Ser Leu Gln His Cys Pro Val Val Thr Ala Glu Gly His Val Leu
 1 5 10 15
 Ile Phe Asp Asn Gly Tyr Gly Cys Asn Phe Ser Gly Ser Asn Arg His
 20 25 30
 Ser Arg Gly Glu Tyr Lys Ile Val Gly Leu Asp Val Glu Gln Ile Trp
 35 40 45
 Glu Tyr Gly Lys Glu Arg Gly Glu Asp Phe Phe Ser Pro Ile Thr Ser
 50 55 60
 Glu Val Gln Tyr Ile Glu Glu Ser
 65 70

<210> 9417
 <211> 103
 <212> PRT
 <213> B.fragilis

<400> 9417
 Gln Cys Ser Gln Val Tyr Tyr Asp Ala Tyr Ser Lys Cys Val Ala Val
 1 5 10 15
 Leu Ser Leu Ser Cys Phe Ala Gly Gly Glu Asn Ser Phe Val Ser Leu
 20 25 30
 Glu Gly Met Asn Val Ala Ala His Lys Gly Gly Tyr Gly Gln Ser Ser
 35 40 45
 Ile Phe Arg Asp Gly Gly Arg Lys Ser Gly Gly Leu Met Arg Val Gly
 50 55 60
 Ser Phe Arg Ala Pro Asn Gly Trp Gly Glu Tyr Ala Asn Glu Lys Asn
 65 70 75 80
 Gln Ala Arg Ala Lys Leu Val Ile Phe Pro Thr Asn Tyr Ile Asp Lys
 85 90 95
 Asp Ser Lys Lys Ser Asn Arg
 100

<210> 9418
 <211> 83
 <212> PRT
 <213> B.fragilis

<400> 9418
 Val Pro Glu Gln Gln Lys Val Ala Gln Asp Phe Ala Met Ser Glu Phe
 1 5 10 15

Ser Leu Ile Leu Val Leu Gln Lys Glu Asn Lys Gln Asn Ser Asn Met
 20 25 30
 Thr Trp Gln Lys Tyr Lys Leu Asn Leu Arg Asn Ser His Leu Leu Glu
 35 40 45
 Glu Phe Phe Gln Ser Trp Arg Asn Leu Thr Pro Cys Phe His Pro Leu
 50 55 60
 Ser Thr Gln His Trp Val Arg Asp Ala Ala Val Ser Ser Asp Ile Ser
 65 70 75 80
 Ser Ala Arg

<210> 9419
 <211> 114
 <212> PRT
 <213> B.fragilis

<400> 9419
 Phe Arg Trp His Ile Arg Val Asn Leu Tyr Gly Tyr Arg Leu Val Gly
 1 5 10 15
 Arg Phe Phe Pro Val Tyr Ser Gly Ser Gly Cys Lys Gly Val Thr Tyr
 20 25 30
 Lys Lys Asp Ile Val Asp Asp Leu Ile Glu His Lys Cys Asp Cys Ser
 35 40 45
 Lys Leu Pro Ala Gly Thr Val Ile Leu Lys Val Met Lys Arg Gln Asn
 50 55 60
 Leu Pro Ile Trp Val Asp Lys Gly Thr Val Gln Leu Asn Lys Leu Ile
 65 70 75 80
 Pro Ala Leu Lys Gly Ile Ala Leu Glu Leu Gly Ser Asn Val His Val
 85 90 95
 Asp Glu Thr Trp Cys Arg Tyr Arg Thr Cys Phe Glu Tyr Lys Lys Ile
 100 105 110
 Tyr Met

<210> 9420
 <211> 129
 <212> PRT
 <213> B.fragilis

<400> 9420
 Lys Pro Asp Asn Asn Ser Leu Ile Asn Leu Lys Lys Ser Ile Met Lys
 1 5 10 15
 Lys Asn Arg Lys Ala Val Ser Lys Asn Glu Met Met Lys Gly Lys Trp
 20 25 30
 Lys Arg Gln Ile Met Leu Glu Lys Asp Tyr Thr Glu Gln Cys Ser Glu
 35 40 45
 Trp Met Ala Glu Arg Leu Glu Ala Leu Ile Glu Tyr Met Gln Tyr Gly
 50 55 60
 His Ala Ala Val Ala Tyr Met Lys Gln Asp Gly Thr Phe Lys Leu Val
 65 70 75 80
 Lys Gly Thr Leu Val Gly Tyr Glu Lys Asp Phe Gly Lys Gln Tyr Asp
 85 90 95
 Pro Met Glu Ile Lys Asn Thr Val Val Tyr Arg Asp Val Glu Gln Gln
 100 105 110
 Arg Trp Met Thr Phe Lys Ile Glu Asn Phe Met Glu Trp Arg Ala Ile
 115 120 125
 Val

<210> 9421
 <211> 364
 <212> PRT
 <213> B.fragilis

<400> 9421

Leu	Arg	Leu	Asn	Met	Ile	Asp	Arg	Met	Asp	Lys	Asn	Ala	Lys	Ile	Tyr
1			5						10					15	
Val	Ala	Gly	His	His	Gly	Leu	Val	Gly	Ser	Ala	Ile	Trp	Lys	Asn	Leu
			20					25					30		
Gln	Glu	Lys	Gly	Tyr	Thr	Asn	Leu	Val	Gly	Arg	Thr	His	Lys	Glu	Leu
		35					40					45			
Asp	Leu	Leu	Asp	Gly	Ala	Ala	Val	Lys	Gln	Phe	Phe	Asp	Glu	Glu	Met
	50				55						60				
Pro	Glu	Tyr	Val	Phe	Leu	Ala	Ala	Ala	Phe	Val	Gly	Gly	Ile	Met	Ala
65					70					75					80
Asn	Ser	Ile	Tyr	Arg	Ala	Asp	Phe	Ile	Tyr	Lys	Asn	Leu	Gln	Ile	Gln
			85						90					95	
Gln	Asn	Val	Ile	Gly	Glu	Ser	Phe	Arg	His	Gln	Val	Lys	Lys	Leu	Leu
		100						105					110		
Phe	Leu	Gly	Ser	Thr	Cys	Ile	Tyr	Pro	Arg	Asp	Ala	Glu	Gln	Pro	Met
	115						120					125			
Lys	Glu	Asp	Val	Leu	Leu	Thr	Ser	Pro	Leu	Glu	Tyr	Thr	Asn	Glu	Pro
	130					135					140				
Tyr	Ala	Ile	Ala	Lys	Ile	Ala	Gly	Leu	Lys	Met	Cys	Glu	Ser	Phe	Asn
145				150						155					160
Leu	Gln	Tyr	Gly	Thr	Asn	Tyr	Ile	Ala	Val	Met	Pro	Thr	Asn	Leu	Tyr
			165					170						175	
Gly	Pro	Asn	Asp	Asn	Phe	Asp	Leu	Glu	Arg	Ser	His	Val	Leu	Pro	Ala
		180					185						190		
Met	Ile	Arg	Lys	Ile	His	Leu	Ala	His	Cys	Leu	Lys	Lys	Gly	Asp	Trp
	195					200						205			
Glu	Ala	Val	Arg	Lys	Asp	Met	Asn	Leu	Arg	Pro	Val	Glu	Gly	Ile	Ser
	210				215						220				
Gly	Ala	Asn	Ser	Asn	Glu	Glu	Ile	Leu	Arg	Ile	Leu	Arg	Lys	Tyr	Gly
225				230					235						240
Ile	Thr	Glu	Thr	Glu	Val	Thr	Leu	Trp	Gly	Thr	Gly	Thr	Pro	Leu	Arg
			245					250						255	
Glu	Phe	Leu	Trp	Ser	Glu	Glu	Met	Ala	Asp	Ala	Ser	Val	Phe	Val	Met
		260					265						270		
Glu	His	Val	Asp	Phe	Lys	Asp	Thr	Tyr	Lys	Ala	Gly	Ala	Lys	Asp	Ile
	275					280						285			
Arg	Asn	Cys	His	Ile	Asn	Ile	Gly	Thr	Gly	Lys	Glu	Ile	Thr	Ile	Arg
	290				295						300				
Glu	Leu	Ala	Gly	Leu	Ile	Val	Asn	Thr	Val	Gly	Tyr	Gln	Gly	Lys	Leu
305				310					315						320
Thr	Phe	Asp	Ser	Ser	Lys	Pro	Asp	Gly	Thr	Met	Arg	Lys	Leu	Thr	Asp
			325					330						335	
Pro	Ser	Lys	Leu	His	Asn	Leu	Gly	Trp	His	His	Lys	Ile	Asp	Ile	Glu
		340				345						350			
Glu	Gly	Val	Gln	Arg	Met	Tyr	Glu	Trp	Tyr	Leu	Gly				
	355					360									

<210> 9422
 <211> 386
 <212> PRT
 <213> B.fragilis

<400> 9422

Leu Met Lys Lys Ile Ile Leu Val Ala Ala Leu Leu Ser Ala Ala Val
 1 5 10 15
 Cys Leu Pro Ala Gln Asn Lys Gly Gly Asn Lys Ser Gly Gly Ile Asn
 20 25 30
 Leu Ser Leu Trp Lys Lys Ala Cys Thr Gln Pro Leu Asp Ser Thr Gln
 35 40 45
 Thr Thr Tyr Val Asn Leu Gly Leu Phe Ser Ala Met His Lys Leu His
 50 55 60
 Gly Val Gly Phe Asn Ala Phe Gly Ser Met Val Gln Asn Asn Met Asn
 65 70 75 80
 Gly Val Gln Ile Ser Gly Leu Ala Asn Leu Ala Gly Gly Ser Met His
 85 90 95
 Gly Val Gln Ile Gly Gly Ile Ser Asn Val Asn Gly Asn Asn Leu Ala
 100 105 110
 Gly Leu Ser Val Ser Gly Leu Val Asn Ile Thr Gly Asn Lys Ala Lys
 115 120 125
 Gly Val Leu Ile Thr Gly Leu Ser Asn Ile Ala Gly Asp Asn Met Arg
 130 135 140
 Gly Leu Met Met Ser Gly Ile Met Asn Ile Thr Gly Asp Lys Ala Ala
 145 150 155 160
 Gly Val Gln Leu Ala Gly Leu Ala Asn Val Thr Gly Glu Glu Tyr Asp
 165 170 175
 Gly Leu Met Met Ser Gly Leu Leu Asn Val Val Gly Glu Glu Met Asn
 180 185 190
 Gly Leu Gln Leu Ser Gly Leu Ala Asn Val Thr Gly Gly Gln Met Asn
 195 200 205
 Gly Val Gln Leu Gly Leu Phe Asn Phe Ala Ser Lys Ala Lys Gly Leu
 210 215 220
 Gln Ile Gly Leu Phe Asn Tyr His Lys Glu Asp Met Lys Gly Leu Gln
 225 230 235 240
 Leu Gly Leu Val Asn Ala Asn Pro Gln Thr Lys Val Gln Leu Met Val
 245 250 255
 Phe Gly Gly Asn Ser Thr Lys Ile Asn Val Gly Ala Arg Phe Lys Asn
 260 265 270
 Lys Leu Phe Tyr Thr Ile Leu Gly Gly Gly Thr His Tyr Leu Asp Phe
 275 280 285
 Asp Asp Lys Phe Ser Ala Ala Leu Phe Tyr Arg Ala Gly Leu Glu Leu
 290 295 300
 Pro Leu Tyr Arg Asn Leu Phe Val Ser Gly Asp Leu Arg Tyr Gln His
 305 310 315 320
 Ile Glu Thr Phe Arg Asn Lys Lys Val Glu Gly Ile Pro Ala Arg Leu
 325 330 335
 Tyr Ala Leu Gln Ala Arg Leu Asn Leu Glu Tyr Arg Phe Thr Asp Lys
 340 345 350
 Phe Gly Leu Phe Val Thr Gly Gly Tyr Gly Gly Ser Arg Tyr Tyr Asn
 355 360 365
 Lys Ala Arg Thr Tyr Asp Lys Gly Val Ile Ala Glu Ala Gly Val Val
 370 375 380
 Leu Phe
 385

<210> 9423

<211> 83

<212> PRT

<213> B.fragilis

<400> 9423

His Val Asp Leu Phe Ser Ile Arg Leu Tyr Leu Cys Cys Thr Phe Lys
 1 5 10 15

Asn	Asn	Phe	Met	Tyr	Ser	Ser	Ser	Asp	Phe	Glu	Lys	Tyr	Asn	Phe	Ser
			20					25					30		
Thr	Arg	Gln	Arg	Val	Asn	Pro	Lys	Gly	Ile	Ser	Ile	Asn	Ser	Phe	Cys
		35					40					45			
Leu	Ile	Gln	Gly	Val	Leu	Tyr	Arg	Asn	Phe	Asn	Thr	Trp	Phe	Val	Lys
	50					55					60				
Thr	Arg	Lys	Arg	Ile	Val	Pro	Val	Gln	Ile	Glu	Gly	Phe	Leu	Phe	Leu
65					70					75					80
Ile	Ser	Leu													

<210> 9424
 <211> 69
 <212> PRT
 <213> B.fragilis

Arg	Cys	Arg	Leu	Ala	His	Val	Arg	Asn	Lys	Phe	Lys	Asp	Ala	Tyr	Asn
1				5					10					15	
Gln	Gly	Tyr	Arg	Lys	Ala	Arg	Phe	Phe	Leu	Glu	Gln	Val	Ala	Lys	Leu
			20					25					30		
Tyr	Lys	His	Glu	Asp	Asp	Tyr	Arg	Arg	Asp	Asn	Leu	Leu	Ala	Thr	Glu
		35				40						45			
Thr	Lys	Glu	Lys	Cys	Asn	Asp	Ile	Tyr	Ile	Asn	Gly	Ile	Val	Asp	Ala
	50					55					60				
Leu	Cys	Asp	Gly	Leu											
65															

<210> 9425
 <211> 63
 <212> PRT
 <213> B.fragilis

Ser	Arg	Leu	Leu	Val	Ser	Gly	Ala	Leu	Lys	Tyr	Asp	Leu	Asn	Tyr	Thr
1				5					10					15	
Asp	Ser	Leu	Asn	Asn	Ser	Val	Phe	Pro	Asn	Thr	Asn	Phe	Val	Ser	Thr
		20						25					30		
Arg	Ile	Ile	Glu	Val	Asp	Ser	Lys	Asn	Asn	Val	Ser	Phe	Glu	Met	Leu
		35				40						45			
Tyr	Lys	Ser	Gln	Lys	Met	Asp	Met	Thr	Phe	Arg	Met	Gln	Lys	Met	
	50					55					60				

<210> 9426
 <211> 390
 <212> PRT
 <213> B.fragilis

Ile	Leu	Phe	Cys	Phe	Met	Lys	Lys	Val	Val	Leu	Val	Phe	Gly	Thr	Arg
1				5					10					15	
Pro	Glu	Ala	Ile	Lys	Met	Ala	Pro	Ile	Val	Lys	Glu	Phe	Gln	Lys	His
		20						25					30		
Pro	Asp	Glu	Phe	Lys	Thr	Ile	Val	Cys	Val	Thr	Gly	Gln	His	Arg	Glu
		35				40						45			
Met	Leu	Asp	Gln	Val	Leu	Asn	Ile	Phe	Glu	Ile	Thr	Pro	Asp	Tyr	Asp
	50					55					60				
Leu	Asn	Ile	Met	Lys	Gln	Gly	Gln	Asp	Leu	Tyr	Asp	Ile	Thr	Ser	Arg
65					70					75					80

Val Leu Thr Gly Met Arg Asp Val Leu Arg Glu Ser Gln Pro Asp Ile
 85 90 95
 Val Leu Val His Gly Asp Thr Thr Thr Ser Met Ala Ser Ala Leu Ala
 100 105 110
 Ala Phe Tyr Gln Gln Ile Pro Val Gly His Ile Glu Ala Gly Leu Arg
 115 120 125
 Thr His Asn Ile Tyr Ser Pro Trp Pro Glu Glu Met Asn Arg Gln Ile
 130 135 140
 Thr Ser Arg Ile Thr Thr Cys His Phe Ser Pro Thr Leu Leu Ser Lys
 145 150 155 160
 Gln Asn Leu Leu Asp Glu Gly Ile Arg Glu Ser Ser Ile Thr Val Thr
 165 170 175
 Gly Asn Thr Val Ile Asp Ala Leu Tyr Met Val Val Asp Lys Ile Lys
 180 185 190
 Asn Asn Lys Glu Leu Asn Lys Glu Leu Glu Ser Ile Leu Lys Gln Thr
 195 200 205
 Gly Tyr Asp Ile Asn Arg Leu Gln Asn Gly Arg Lys Leu Ile Leu Ile
 210 215 220
 Thr Gly His Arg Arg Glu Asn Phe Gly Asn Gly Phe Ile Ser Met Cys
 225 230 235 240
 Lys Ala Ile Asn Thr Leu Lys Lys Lys Tyr Pro Asp Val Asp Phe Val
 245 250 255
 Tyr Pro Met His Leu Asn Pro Asn Val Arg Lys Pro Ile His Glu Ile
 260 265 270
 Phe Gly Asp Asn Leu Ser Asn His Asn Asn Leu Phe Phe Ile Glu Pro
 275 280 285
 Leu Glu Tyr Leu Ser Phe Val Tyr Leu Met Glu Lys Ser Thr Ile Val
 290 295 300
 Leu Thr Asp Ser Gly Gly Ile Gln Glu Glu Ala Pro Gly Leu Gly Lys
 305 310 315 320
 Pro Val Leu Val Met Arg Asp Thr Thr Glu Arg Pro Glu Ala Leu Glu
 325 330 335
 Ala Gly Thr Val Lys Leu Val Gly Thr Asn Tyr Asp Lys Ile Val Asp
 340 345 350
 Gly Ile Ser Thr Leu Leu Asp Asp Lys Val Tyr Tyr Glu Glu Met Ser
 355 360 365
 Lys Ser Val Asn Pro Tyr Gly Asp Gly Lys Ala Ser Glu Arg Ile Val
 370 375 380
 Asn Asn Ile Asn Tyr Val
 385 390

<210> 9427

<211> 673

<212> PRT

<213> B.fragilis

<400> 9427

Ile Val Asn Arg Lys Ile Val Asn His Met Thr Ala Gln Ser Asn Ile
 1 5 10 15
 Thr Pro Glu Ser Ile Val Ala Asp Leu Arg Tyr Leu Gln Leu Leu Ser
 20 25 30
 Arg Ser Phe Pro Thr Ile Ala Ala Ser Thr Glu Ile Ile Asn Leu
 35 40 45
 Glu Ala Ile Leu Asn Leu Pro Lys Gly Thr Glu His Phe Leu Thr Asp
 50 55 60
 Ile His Gly Glu Tyr Glu Ala Phe Gln His Val Leu Lys Asn Ala Ser
 65 70 75 80
 Gly Ala Val Lys Arg Lys Val Asn Glu Ile Phe Gly His Thr Leu Arg
 85 90 95

Glu	Ile	Glu	Lys	Lys	Glu	Leu	Cys	Thr	Leu	Ile	Tyr	Tyr	Pro	Glu	Glu
			100					105					110		
Lys	Leu	Gln	Leu	Ile	Lys	Ala	Thr	Glu	Thr	Asp	Ile	Asp	Asp	Trp	Tyr
			115					120				125			
Leu	Ile	Thr	Leu	Asn	Gln	Leu	Val	Lys	Val	Cys	Gln	Asn	Val	Ser	Ser
			130					135				140			
Lys	Tyr	Thr	Arg	Ser	Lys	Val	Arg	Lys	Ser	Leu	Pro	Ala	Glu	Phe	Ser
145						150				155					160
Tyr	Ile	Ile	Gln	Glu	Leu	Leu	His	Glu	Ser	Thr	Ile	Glu	Pro	Asn	Lys
				165				170						175	
His	Ala	Tyr	Ile	Asn	Val	Ile	Ile	Ser	Thr	Ile	Ile	Ser	Thr	Arg	Arg
			180					185					190		
Ala	Asp	Asp	Phe	Ile	Ile	Ala	Met	Cys	Asn	Leu	Ile	Gln	Arg	Leu	Thr
			195					200				205			
Ile	Asp	Ser	Leu	His	Ile	Val	Gly	Asp	Ile	Tyr	Asp	Arg	Gly	Pro	Gly
			210				215				220				
Ala	His	Ile	Ile	Met	Asp	Thr	Leu	Cys	Asp	Tyr	His	Asn	Phe	Asp	Ile
225						230				235					240
Gln	Trp	Gly	Asn	His	Asp	Ile	Leu	Trp	Met	Gly	Ala	Ala	Ser	Gly	Asn
				245				250						255	
Glu	Ala	Cys	Met	Ala	Asn	Val	Ile	Arg	Leu	Ser	Met	Arg	Tyr	Gly	Asn
			260					265					270		
Leu	Gly	Thr	Leu	Glu	Asp	Gly	Tyr	Gly	Ile	Asn	Leu	Leu	Pro	Leu	Ala
			275					280				285			
Thr	Phe	Ala	Met	Asp	Thr	Tyr	Ala	Asp	Asp	Pro	Cys	Thr	Ile	Phe	Ala
			290				295				300				
Pro	Lys	Thr	Asn	Phe	Ala	Asp	Ser	Thr	Tyr	Asn	Glu	Lys	Thr	Leu	Arg
305					310					315					320
Leu	Ile	Thr	Gln	Met	His	Lys	Ala	Ile	Thr	Ile	Ile	Gln	Phe	Lys	Leu
				325				330						335	
Glu	Ala	Asn	Ile	Ile	Asn	Arg	Arg	Pro	Glu	Phe	Gly	Met	Gly	Gly	Arg
			340					345				350			
Lys	Leu	Leu	Glu	Lys	Ile	Asp	Phe	Glu	Arg	Gly	Val	Phe	Val	Tyr	Glu
			355				360					365			
Gly	Lys	Glu	Tyr	Pro	Leu	Arg	Asp	Thr	Asn	Phe	Pro	Thr	Val	Asp	Pro
			370				375				380				
Ala	Asp	Pro	Tyr	Arg	Leu	Thr	Asp	Glu	Glu	Gln	Glu	Leu	Ile	Glu	Lys
385					390					395					400
Ile	His	Tyr	Ser	Phe	Met	Asn	Ser	Glu	Lys	Leu	Lys	Lys	His	Met	Arg
				405				410						415	
Cys	Leu	Phe	Thr	Tyr	Gly	Gly	Met	Tyr	Leu	Val	Cys	Asn	Ser	Asn	Leu
			420					425					430		
Leu	Tyr	His	Ala	Ser	Val	Pro	Leu	Asn	Glu	Asp	Gly	Ser	Phe	Lys	His
			435				440					445			
Val	Asn	Ile	Cys	Gly	Lys	Glu	Tyr	Trp	Gly	Lys	Asn	Leu	Leu	Asp	Lys
			450				455				460				
Ile	Asp	Gln	Leu	Ile	Arg	Thr	Ala	Tyr	Phe	Asp	Glu	Asp	Asp	Glu	Glu
465					470					475					480
Glu	Lys	Arg	Phe	Ala	Met	Asp	Tyr	Ile	Trp	Tyr	Leu	Trp	Cys	Gly	Pro
				485				490						495	
Asp	Ala	Pro	Ser	Phe	Asp	Lys	Asp	Lys	Met	Ala	Thr	Phe	Glu	Arg	Tyr
			500					505					510		
Phe	Ile	Ala	Asp	Lys	Ser	Leu	His	Lys	Glu	Thr	Lys	Gly	Tyr	Tyr	Tyr
			515				520					525			
Ala	Leu	Arg	Asn	Lys	Glu	Glu	Ile	Cys	Asp	Arg	Ile	Leu	Glu	Glu	Phe
			530				535				540				
Gly	Val	Thr	Gly	Gln	His	Thr	His	Ile	Ile	Asn	Gly	His	Val	Pro	Val
545					550					555					560
Lys	Thr	Ile	Lys	Gly	Glu	Gln	Pro	Met	Lys	Ala	Gly	Gly	Lys	Leu	Leu

565 570 575
 Val Ile Asp Gly Gly Phe Ser Lys Ala Tyr Gln Pro Glu Thr Gly Ile
 580 585 590
 Ala Gly Tyr Thr Leu Val Tyr His Ser His Gly Leu Gln Leu Val Gln
 595 600 605
 His Asp Pro Phe Gln Ser Thr Gln Lys Ala Ile Glu Glu Gly Gln Asp
 610 615 620
 Ile Lys Ser Thr Thr Phe Val Ile Glu Phe Asn Ser Gln Arg Met Met
 625 630 635 640
 Val Lys Asp Thr Asp Lys Gly Lys Glu Leu Val Thr Gln Ile Leu Asp
 645 650 655
 Leu Lys Lys Leu Leu Val Ala Tyr Arg Ile Gly Leu Ile Lys Glu Lys
 660 665 670
 Val

<210> 9428
 <211> 133
 <212> PRT
 <213> B.fragilis

<400> 9428
 Val Asn Lys Leu Leu Lys Asn Trp Ser Tyr Leu Leu Leu Ser Asp Ile
 1 5 10 15
 Ser Gln Ser Val Ile Asn Phe Phe Val Phe Met Leu Leu Ala Arg Lys
 20 25 30
 Leu Thr Pro Val Gly Tyr Gly Glu Phe Asn Val Ile Leu Ala Ile Val
 35 40 45
 Ala Ile Phe Ser Val Val Ala Thr Asn Leu Gly Ala Asn His Val Ile
 50 55 60
 Thr Arg Glu Val Thr Leu His Pro Asp Asn Thr Lys Gly Ile Cys Tyr
 65 70 75 80
 Asn Val Ile Pro Phe Arg Leu Ile Ala Leu Ala Ile Ala Phe Leu Gly
 85 90 95
 Val Phe Val Tyr Ile Val Ser Gly Lys Asp Asp Gln Phe Ser Pro Ser
 100 105 110
 Leu Val Leu Phe Ile Cys Ile Phe Ala Pro Ser Val Trp Arg Ser Lys
 115 120 125
 Arg Pro His Ser His
 130

<210> 9429
 <211> 122
 <212> PRT
 <213> B.fragilis

<400> 9429
 His Tyr Gly Arg Lys Lys Val Val Ile Ser Leu Asn Asp Asn Leu Val
 1 5 10 15
 Thr Ile Glu Val Asn Gly Lys Val Ile Phe Ala Gly Lys Ala Asp Leu
 20 25 30
 Gln Phe Ser Leu Asn Gln Lys Val Arg Glu Pro Leu Arg Ile Thr Lys
 35 40 45
 Gly Lys Gly Lys Leu Met Glu Ala Leu Thr Glu Ser Phe Ile Lys Gly
 50 55 60
 Gly Ile Asn Ser Met Glu Asn Arg Pro Ile Glu Glu Leu Gln Glu Thr
 65 70 75 80
 Ile Lys Glu Tyr Leu Thr Phe Glu Tyr Gln Arg Lys Gly Ile Ala Thr
 85 90 95

Glu Pro Asn Lys Arg Ser Phe Leu Ser Glu Leu Lys Lys Tyr Ala Arg
 100 105 110
 Ala Phe Arg Lys Lys Arg Asp Glu Ser Glu
 115 120

<210> 9430
 <211> 89
 <212> PRT
 <213> B.fragilis

<400> 9430
 Lys Pro Phe Gly Arg Val Asn Asn Asp His Tyr Asn Thr Ser Lys Asn
 1 5 10 15
 Arg Lys Gly Ile Asp Lys Asp Lys Pro Val Lys Ser Arg Asn Asp Asp
 20 25 30
 Cys Ser Asp Leu Asp Gly Thr Ser Ala Ser Thr Ser Thr Asp Thr Gly
 35 40 45
 Trp Leu Asp Ala Ser Ser Leu Tyr Ile Pro Val Leu Ala Val Lys Val
 50 55 60
 Leu Leu Ile Arg Lys Ile Ser Trp Met Ile Leu Leu Asn Ile Asn Val
 65 70 75 80
 Thr Val Arg Asn Phe Arg Pro Gly Arg
 85

<210> 9431
 <211> 61
 <212> PRT
 <213> B.fragilis

<400> 9431
 Val Phe Asn Gly Ile Leu Glu Ala Lys Gln Leu Ile Gly Glu Glu Ile
 1 5 10 15
 Thr Ser Ser Pro Gly Phe Asn Ser Lys Thr Val Asn Ala Thr Cys Ile
 20 25 30
 Ala Glu Ala Tyr Glu Phe Val Val Ser Lys Phe Ser Ile Pro Lys Lys
 35 40 45
 Val Asp Asn Phe Ser Ser Lys Arg Ser Pro His Phe Pro
 50 55 60

<210> 9432
 <211> 296
 <212> PRT
 <213> B.fragilis

<400> 9432
 Phe Met Lys Gly Ile Val Leu Ala Gly Gly Ser Gly Thr Arg Leu Tyr
 1 5 10 15
 Pro Ile Thr Lys Gly Ile Ser Lys Gln Leu Leu Pro Ile Phe Asp Lys
 20 25 30
 Pro Met Ile Tyr Tyr Pro Ile Ser Val Leu Met Leu Ala Gly Ile Arg
 35 40 45
 Glu Ile Leu Ile Ile Ser Thr Pro His Asp Leu Pro Gly Phe Gln Arg
 50 55 60
 Leu Leu Gly Asp Gly Ser Asp Phe Gly Val His Phe Glu Tyr Ala Glu
 65 70 75 80
 Gln Pro Ser Pro Asp Gly Leu Ala Gln Ala Phe Ile Ile Gly Glu Lys
 85 90 95
 Phe Ile Gly Ser Asp Ser Val Cys Leu Val Leu Gly Asp Asn Ile Phe
 100 105 110

Tyr Gly Gln Gly Phe Thr Tyr Met Leu His Glu Ala Val Arg Thr Ala
 115 120 125
 Glu Ser Glu Asn Lys Ala Thr Val Phe Gly Tyr Trp Val Ser Asp Pro
 130 135 140
 Glu Arg Tyr Gly Val Ala Glu Phe Asp Gln Glu Gly Asn Val Leu Ser
 145 150 155 160
 Ile Glu Glu Lys Pro Gln Ile Pro Lys Ser His Tyr Ala Val Val Gly
 165 170 175
 Leu Tyr Phe Tyr Pro Asn Lys Val Val Glu Ile Ala Gln Asn Ile Lys
 180 185 190
 Pro Ser Pro Arg Gly Glu Leu Glu Ile Thr Thr Val Asn Gln Gln Phe
 195 200 205
 Leu Leu Asp Lys Lys Leu Lys Val Lys Leu Leu Gly Arg Gly Phe Ala
 210 215 220
 Trp Leu Asp Thr Gly Thr His Asp Ser Leu Ser Glu Ala Ser Thr Phe
 225 230 235 240
 Ile Glu Val Ile Glu Lys Arg Gln Gly Leu Lys Val Ala Cys Leu Glu
 245 250 255
 Gly Ile Ala Phe Arg Gln Gly Trp Ile Ser Leu Ala Lys Met Lys Ser
 260 265 270
 Leu Ala Asn Leu Met Leu Arg Asn Gln Tyr Gly Gln Tyr Leu Leu Lys
 275 280 285
 Val Ile Asn Glu Leu Ser Val Lys
 290 295

<210> 9433

<211> 556

<212> PRT

<213> B.fragilis

<400> 9433

Ile Ile His Met Glu Trp Leu Tyr Ser Leu Phe Ile Glu His Ser Ala
 1 5 10 15
 Leu Gln Ala Val Val Val Leu Ser Leu Ile Ser Ala Ile Gly Leu Gly
 20 25 30
 Leu Gly Lys Ile His Val Cys Gly Ile Ser Leu Gly Val Thr Phe Val
 35 40 45
 Phe Phe Ala Gly Ile Leu Ala Gly His Phe Gly Leu Ser Ile Asp Pro
 50 55 60
 Gln Met Leu Asn Tyr Ala Glu Ser Phe Gly Leu Ile Ile Phe Val Tyr
 65 70 75 80
 Ala Leu Gly Leu Gln Val Gly Pro Gly Phe Phe Ser Ser Phe Arg Lys
 85 90 95
 Gly Gly Val Thr Leu Asn Met Leu Ala Ile Ala Val Val Ile Leu Gly
 100 105 110
 Thr Phe Leu Ala Val Val Cys Ser Tyr Thr Thr Gly Val Ser Leu Pro
 115 120 125
 Asn Met Val Gly Ile Leu Cys Gly Ala Thr Thr Asn Thr Pro Ala Leu
 130 135 140
 Gly Ala Ala Gln Gln Thr Leu Lys Gln Met Gly Leu Glu Ser Ser Thr
 145 150 155 160
 Pro Ala Leu Gly Cys Ala Val Ala Tyr Pro Leu Gly Val Ile Gly Val
 165 170 175
 Ile Leu Ala Val Leu Leu Ile Arg Lys Leu Leu Val Arg Arg Glu Asp
 180 185 190
 Leu Glu Val Gln Glu Lys Asp Asp Ala Asn Lys Thr Tyr Ile Ala Ala
 195 200 205
 Phe Gln Val His Asn Pro Ala Ile Phe Asn Lys Ser Ile Lys Asp Ile
 210 215 220

Ala	His	Met	Ser	Tyr	Pro	Lys	Phe	Val	Ile	Ser	Arg	Leu	Trp	Arg	Asp
225					230					235					240
Gly	Asn	Val	Ser	Ile	Pro	Thr	Ser	Glu	Lys	Ile	Ile	Lys	Glu	Gly	Asp
				245					250						255
Arg	Leu	Leu	Val	Val	Thr	Ser	Glu	Lys	Asp	Ala	Leu	Ala	Leu	Thr	Val
			260					265							270
Leu	Phe	Gly	Glu	Gln	Glu	Asn	Thr	Asp	Trp	Asn	Lys	Glu	Asp	Ile	Asp
		275						280							285
Trp	Asn	Ala	Ile	Asp	Ser	Gln	Leu	Ile	Ser	Gln	Arg	Ile	Val	Val	Thr
		290						295							300
Arg	Pro	Glu	Leu	Asn	Gly	Lys	Lys	Leu	Gly	Ala	Leu	Arg	Leu	Arg	His
305					310					315					320
His	Tyr	Gly	Ile	Asn	Ile	Ser	Arg	Val	Tyr	Arg	Ser	Gly	Val	Gln	Leu
				325						330					335
Leu	Ala	Thr	Pro	Glu	Leu	Thr	Leu	Gln	Leu	Gly	Asp	Arg	Leu	Thr	Val
			340					345							350
Val	Gly	Glu	Ala	Ala	Ala	Ile	Gln	Asn	Val	Glu	Lys	Val	Leu	Gly	Asn
			355					360							365
Ala	Ile	Lys	Ser	Leu	Lys	Glu	Pro	Asn	Leu	Val	Ala	Val	Phe	Val	Gly
						375									380
Ile	Ile	Leu	Gly	Leu	Ala	Leu	Gly	Ala	Val	Pro	Phe	Ser	Ile	Pro	Gly
385						390									400
Ile	Ser	Thr	Pro	Val	Arg	Leu	Gly	Leu	Ala	Gly	Gly	Pro	Ile	Ile	Val
				405						410					415
Gly	Ile	Leu	Ile	Gly	Thr	Phe	Gly	Pro	Arg	Leu	His	Met	Ile	Thr	Tyr
			420					425							430
Thr	Thr	Arg	Ser	Ala	Asn	Leu	Met	Leu	Arg	Ala	Leu	Gly	Leu	Ser	Leu
			435					440							445
Tyr	Leu	Ala	Cys	Leu	Gly	Leu	Asp	Ala	Gly	Ala	His	Phe	Phe	Asp	Thr
			450					455							460
Val	Phe	Arg	Pro	Glu	Gly	Leu	Leu	Trp	Ile	Gly	Leu	Gly	Phe	Gly	Leu
465						470									480
Thr	Leu	Val	Pro	Thr	Val	Leu	Val	Gly	Phe	Phe	Ala	Phe	Lys	Ile	Met
				485						490					495
Lys	Ile	Asp	Phe	Gly	Ser	Val	Ser	Gly	Met	Leu	Cys	Gly	Ser	Met	Ala
			500						505						510
Asn	Pro	Met	Ala	Leu	Asn	Tyr	Ala	Asn	Asp	Thr	Ile	Pro	Gly	Asp	Asn
		515						520							525
Pro	Ser	Val	Ala	Tyr	Ala	Thr	Val	Tyr	Pro	Leu	Ser	Met	Phe	Leu	Arg
		530						535							540
Val	Ile	Ile	Ala	Gln	Val	Leu	Leu	Met	Phe	Leu	Leu				
545					550					555					

<210> 9434

<211> 343

<212> PRT

<213> B.fragilis

<400> 9434

Ile	Ile	Leu	Ile	Met	Phe	Lys	Asp	Lys	Val	Leu	Met	Ile	Thr	Gly	Gly
1				5					10					15	
Thr	Gly	Ser	Phe	Gly	Asn	Ala	Val	Leu	Lys	His	Phe	Leu	Asn	Ser	Asp
			20					25						30	
Leu	Lys	Glu	Ile	Arg	Ile	Phe	Ser	Arg	Asp	Glu	Lys	Lys	Gln	Glu	Asp
		35						40						45	
Met	Arg	Ile	Glu	Tyr	Lys	Asn	Asp	Lys	Leu	Asn	Phe	Ile	Ile	Gly	Asn
		50				55					60				
Val	Arg	Asp	Phe	Asp	Thr	Ile	Asn	Asn	Ala	Met	Ala	Gly	Val	Asp	Tyr
65					70					75					80

Val Phe His Ala Ala Ala Leu Lys Gln Val Pro Ser Cys Glu Phe Tyr
 85 90 95
 Pro Met Gln Ala Ile Arg Thr Asn Leu Tyr Gly Ala Glu Asn Val Leu
 100 105 110
 Glu Ala Ala Ala Arg Asn Asn Val Lys Lys Val Val Val Leu Ser Thr
 115 120 125
 Asp Lys Ala Ala Tyr Pro Ile Asn Ala Met Gly Met Thr Lys Ala Leu
 130 135 140
 Met Glu Lys Leu Ala Ile Ser Lys Ala Arg Asp Ala Arg Val Gln Ala
 145 150 155 160
 Asn Gly Gly Val Ile Cys Ala Thr Arg Tyr Gly Asn Val Met Cys Ser
 165 170 175
 Arg Gly Ser Ile Ile Pro Leu Phe Ile Lys Gln Ile Lys Glu Gly Leu
 180 185 190
 Pro Leu Thr Ile Thr Glu Pro Arg Met Thr Arg Phe Met Met Ser Leu
 195 200 205
 Asp Asp Ala Val Asp Leu Val Leu Phe Ala Phe Lys Asn Ala Glu Pro
 210 215 220
 Gly Asp Leu Phe Val Gln Lys Ala Pro Ala Ala Thr Ile Gln Asp Leu
 225 230 235 240
 Ala Ile Ala Leu Lys Glu Leu Phe His Ala Asn Asn Glu Ile His Ile
 245 250 255
 Ile Gly Pro Arg His Gly Glu Lys Met Tyr Glu Thr Leu Cys Thr Lys
 260 265 270
 Glu Glu Met Ser Lys Ala Thr Asp Met Gly Glu Phe Tyr Arg Val Pro
 275 280 285
 Ala Asp Phe Arg Asp Leu Asn Tyr Thr Lys Tyr Val Gln Lys Asp Gly
 290 295 300
 Pro Met Leu Val Glu His Glu Tyr Asn Ser Glu Asn Thr His Arg Leu
 305 310 315 320
 Asn Val Glu Glu Leu Lys Glu Met Leu Leu Thr Leu Asp Tyr Val Lys
 325 330 335
 Glu Glu Leu Gly Ile Asn Lys
 340

<210> 9435

<211> 187

<212> PRT

<213> B.fragilis

<400> 9435

Met Asn Ile Ile Lys Thr Ala Ile Glu Gly Leu Val Ile Ile Glu Pro
 1 5 10 15
 Arg Leu Phe Gln Asp Asp Arg Gly Tyr Phe Phe Glu Ser Phe Asn Gln
 20 25 30
 Glu Glu Phe Glu Thr Lys Val Cys Lys Thr Thr Phe Ile Gln Asp Asn
 35 40 45
 Glu Ser Lys Ser Thr Tyr Gly Val Ile Arg Gly Leu His Phe Gln Lys
 50 55 60
 Pro Pro Phe Ala Gln Ser Lys Leu Val Arg Val Ile Arg Gly Ser Val
 65 70 75 80
 Leu Asp Val Ala Val Asp Ile Arg Lys Asp Ser Pro Thr Phe Gly Lys
 85 90 95
 His Ile Ser Val Glu Leu Thr Gly Asp Asn His Arg Gln Phe Phe Ile
 100 105 110
 Pro Arg Gly Phe Ala His Gly Phe Cys Val Leu Ser Glu Glu Val Val
 115 120 125
 Phe Gln Tyr Lys Cys Asp Asn Phe Tyr His Pro Glu Ser Glu Gly Thr
 130 135 140

Ile Ala Trp Asn Asp Ile Asp Leu Asn Ile Ser Trp Arg Ile Pro Leu
 145 150 155 160
 Glu Asp Val Val Leu Ser Arg Lys Asp Lys Asn Ala Leu Pro Leu Lys
 165 170 175
 Glu Met Tyr Ser Asp Val Asn Tyr Phe Arg Phe
 180 185

<210> 9436

<211> 374

<212> PRT

<213> B.fragilis

<400> 9436

Lys Tyr Arg Ile Leu His Arg Gln Lys Asp Tyr Lys Leu Lys Thr Ile
 1 5 10 15
 Asp Met Lys Lys Ala Leu Ile Ser Gly Ile Thr Gly Gln Asp Gly Ser
 20 25 30
 Phe Leu Ala Glu Phe Leu Leu Gln Lys Gly Tyr Glu Val His Gly Ile
 35 40 45
 Leu Arg Arg Ser Ser Ser Phe Asn Thr Gly Arg Ile Glu His Leu Tyr
 50 55 60
 Phe Asp Glu Trp Val Arg Asp Met Lys Gln Lys Arg Thr Val Asn Leu
 65 70 75 80
 His Tyr Gly Asp Met Thr Asp Ser Ser Ser Leu Ile Arg Ile Ile Gln
 85 90 95
 Gln Val Gln Pro Asp Glu Ile Tyr Asn Leu Ala Ala Gln Ser His Val
 100 105 110
 Lys Val Ser Phe Asp Val Pro Glu Tyr Thr Ala Glu Ala Asp Ala Leu
 115 120 125
 Gly Thr Leu Arg Met Leu Glu Ala Val Arg Ile Leu Gly Leu Glu Lys
 130 135 140
 Gln Thr Arg Ile Tyr Gln Ala Ser Thr Ser Glu Leu Tyr Gly Lys Val
 145 150 155 160
 Gln Glu Val Pro Gln Ser Glu Thr Thr Pro Phe Tyr Pro Arg Ser Pro
 165 170 175
 Tyr Gly Val Ala Lys Gln Tyr Gly Phe Trp Ile Thr Lys Asn Tyr Arg
 180 185 190
 Glu Ser Tyr Gly Met Phe Ala Val Asn Gly Ile Leu Phe Asn His Glu
 195 200 205
 Ser Glu Arg Arg Gly Glu Thr Phe Val Thr Arg Lys Ile Thr Leu Ala
 210 215 220
 Ala Ala Arg Ile Ala Gln Gly Glu Gln Asp Lys Leu Tyr Leu Gly Asn
 225 230 235 240
 Leu Asp Ala Lys Arg Asp Trp Gly Tyr Ala Lys Asp Tyr Val Glu Cys
 245 250 255
 Met Trp Leu Ile Leu Gln His Asp Val Pro Glu Asp Phe Val Ile Ala
 260 265 270
 Thr Gly Glu Met His Thr Val Arg Glu Phe Cys Thr Leu Ala Phe Ala
 275 280 285
 Glu Ile Gly Ile Asn Leu Arg Trp Glu Gly Glu Gly Val Asn Glu Lys
 290 295 300
 Gly Ile Asp Thr Ala Thr Gly Lys Val Leu Val Glu Val Asp Pro Lys
 305 310 315 320
 Tyr Phe Arg Pro Ala Glu Val Glu Gln Leu Leu Gly Asn Pro Thr Lys
 325 330 335
 Ala Arg Thr Val Leu Gly Trp Asn Pro Cys Lys Thr Pro Phe Pro Glu
 340 345 350
 Leu Val Lys Ile Met Val Arg His Asp Met Ala Lys Val Lys Arg Met
 355 360 365

Ile Ala Thr Lys His Asp
370

<210> 9437

<211> 364

<212> PRT

<213> B.fragilis

<400> 9437

Ile	Ile	Met	Ile	Pro	Leu	Val	Lys	Pro	Tyr	Leu	Pro	Pro	Ala	Asp	Ile
1			5					10						15	
Leu	Met	Pro	Glu	Leu	His	Lys	Ile	Leu	Tyr	Ser	Gly	Tyr	Ile	Ala	Glu
	20						25						30		
Gly	Glu	Ala	Val	Tyr	Gln	Phe	Glu	Asp	Lys	Phe	Arg	Ala	Tyr	Ile	Gly
	35						40					45			
Asn	Pro	Leu	Ser	Leu	Ala	Leu	His	Ser	Gly	Thr	Asp	Gly	Leu	His	Leu
	50					55					60				
Ser	Leu	Leu	Leu	Ala	Gly	Val	Lys	Pro	Gly	Asp	Glu	Val	Ile	Ser	Thr
65					70					75					80
Pro	Met	Thr	Ala	Glu	Pro	Thr	Asn	Thr	Ser	Ile	Ala	Met	Val	Gly	Gly
			85					90					95		
Lys	Val	Val	Trp	Gly	Asp	Val	Asn	Pro	Asn	Asn	Gly	Leu	Leu	Asp	Pro
		100					105						110		
Arg	Ser	Val	Glu	Ser	Val	Ile	Thr	Glu	Lys	Thr	Lys	Ala	Ile	Val	Leu
	115						120					125			
Val	His	Tyr	Ala	Gly	Met	Val	Cys	Asp	Met	Asp	Ala	Phe	Asn	Lys	Ile
	130					135					140				
Ser	Gln	Lys	Tyr	Asn	Ile	Pro	Ile	Ile	Glu	Asp	Ala	Ala	His	Ala	Leu
145					150					155					160
Gly	Ser	Lys	Tyr	Ala	Gly	Lys	Met	Val	Gly	Cys	Ser	Ser	Pro	Tyr	Thr
			165					170					175		
Ile	Phe	Ser	Leu	Gln	Ala	Ile	Lys	His	Met	Thr	Thr	Ile	Asp	Gly	Gly
			180				185						190		
Phe	Leu	Cys	Leu	Lys	Asp	Glu	Ile	Glu	Phe	Asp	Lys	Ala	Arg	Arg	Leu
	195						200					205			
Arg	Trp	Phe	Gly	Leu	Asp	Lys	Lys	Arg	Ser	Arg	Leu	Glu	Asn	Asp	Ile
	210					215					220				
Thr	Glu	Val	Gly	Tyr	Lys	Tyr	Ala	Met	Asn	Asn	Val	Asn	Ala	Thr	Ile
225					230					235					240
Gly	Asn	Val	Gln	Met	Lys	Tyr	Val	Asp	Lys	Ile	Ile	Ala	Ser	Tyr	Ile
			245					250					255		
Glu	Asn	Gly	Arg	Tyr	Tyr	Asp	Leu	Ala	Leu	Ser	Asp	Ile	Asp	Gly	Ile
		260					265						270		
His	Leu	Val	Asp	Tyr	Ser	Ala	Lys	Thr	Glu	Ala	Ser	Tyr	Trp	Leu	Tyr
	275						280					285			
Thr	Met	Arg	Val	Asp	Glu	Arg	Asp	Asn	Phe	Ile	Lys	Ala	Met	Glu	Ser
	290					295					300				
Ala	Gly	Ile	Leu	Ala	Ser	Pro	Leu	His	His	Arg	Ser	Asp	Thr	His	Ser
305					310					315					320
Ile	Phe	Lys	Glu	Ser	Lys	Arg	Glu	Leu	Pro	Asn	Met	Asp	Arg	Trp	Tyr
			325					330					335		
Arg	Glu	Phe	Val	His	Ile	Pro	Cys	Gly	Trp	Trp	Ile	Thr	Glu	Glu	Val
		340						345					350		
Arg	Thr	Gln	Ile	Val	Glu	Ala	Ile	Lys	Lys	Gly	Trp				
	355						360								

<210> 9438

<211> 83

<212> PRT

[illegible]

290		295		300
Met Leu Gln Phe Arg	Ser Leu Gly Tyr Tyr	Ala Ser Gly Val His Leu		
305	310	315		320
Asn Asn Asn Cys Tyr	Ser Ile Phe Gly Asp Lys Lys Tyr Leu Pro Gly			
	325	330		335
Val Asp Ser Phe Asn Arg	Asn Phe Leu Ala Ile Pro Cys Gly Trp Trp			
	340	345		350
Val Asp Arg Cys Leu Leu				
355				

<210> 9440

<211> 360

<212> PRT

<213> B.fragilis

<400> 9440

Cys Asp Gly Val Phe His His Gly Thr Ile Leu Tyr Ile Ser Lys Lys				
1	5	10	15	
Phe Thr Asp Ser Gly Val Leu Ser Gly Tyr Arg Asp Leu Asp Asp Leu				
	20	25	30	
Leu Phe Ile Tyr Arg Glu Lys Ile His Pro Val Gly Lys Val Tyr Ile				
	35	40	45	
Phe Ile Glu Glu Ile Gln Lys Val Glu Gly Trp Glu His Phe Val His				
	50	55	60	
Ser His Ser Gln Asp Phe Val Asp Thr Cys Glu Leu Phe Ile Ser Gly				
65	70	75	80	
Ser Asn Gln Asp Met Leu Ser Gly Glu Ala Glu Lys Leu Leu Ala Arg				
	85	90	95	
His Tyr Val Ser Phe Glu Ile Phe Pro Phe Ser Phe Ser Glu His Arg				
	100	105	110	
Ile Leu Glu Arg Val Glu Ala Thr Gly Lys Asn Tyr Ala Glu Tyr Met				
	115	120	125	
Gly Lys Gly Ala Leu Pro Ile Leu Phe Asn Leu Pro Asp Ala Glu Ala				
	130	135	140	
Gly Trp Lys Ala Ile Ser Ala Leu Arg Asp Thr Ile Leu Phe Arg Asp				
145	150	155	160	
Ile Ile Arg Arg Tyr Arg Ile Lys Asp Ala Arg Leu Leu Glu Asp Val				
	165	170	175	
Phe Val Tyr Leu Cys Thr His Leu Ala Glu Leu Ile Thr Ile Gly Gln				
	180	185	190	
Leu Val Ser His Phe Ala Ala Gln Asn Arg Lys Thr Ser Tyr Asp Thr				
	195	200	205	
Val Ala Asn Tyr Ile Cys Tyr Leu Glu Asp Thr Ser Leu Ile His Arg				
	210	215	220	
Val Glu Arg Tyr Gln Ile Arg Ser Lys Glu Ile Leu Leu Gly Ser Cys				
225	230	235	240	
Lys Tyr Tyr Ile Asn Asp Trp Ala Phe Met Arg His Leu Tyr Pro Phe				
	245	250	255	
Phe Ala Gly Ser Arg Lys Ser Cys Phe Glu Asn Gln Val Tyr Leu Glu				
	260	265	270	
Leu Arg Arg Ala Gly Tyr Thr Val Phe Val Gly Val Leu Arg Gly Gly				
	275	280	285	
Lys Leu Val Asp Phe Val Gly Arg Lys Lys Asp Arg Ile Val Tyr Leu				
	290	295	300	
Gln Cys Ala Pro Leu Leu Asn Asp Asp Phe Gln Val Glu Gln Met Tyr				
305	310	315	320	
Asn Thr Leu Glu Met Ile Gln Asp Asn Tyr Glu Lys Trp Val Val Ser				
	325	330	335	
Met Asp Asp Thr Thr Leu Pro Ser Lys Glu Gly Ile Arg His Ile Gln				

340 345 350
 Val Trp Gln Leu Pro Glu Ile Leu
 355 360

<210> 9441
 <211> 83
 <212> PRT
 <213> B.fragilis

<400> 9441
 Thr Pro Val Phe Gln Cys Val Val Ala Phe Thr Cys Ala Ser Leu Trp
 1 5 10 15
 Phe Ser Val Ser Leu Cys Gln Ile Lys Ala Met Asp Gln Glu Glu Leu
 20 25 30
 His Thr Gln Ile Leu Met Arg Asp Tyr Leu Glu Arg Gln Glu Leu Lys
 35 40 45
 Ala Ser Ala Ile Ala Thr Asn His Cys Val Asp Met Glu Ser Asp Glu
 50 55 60
 Leu Arg Arg Tyr Val Tyr Ala Ser Phe Trp Gly Ser Trp Lys Arg Asn
 65 70 75 80
 Arg Ser Arg

<210> 9442
 <211> 471
 <212> PRT
 <213> B.fragilis

<400> 9442
 Leu Ile Lys Ser Tyr Ser Asn Met Phe Lys His Leu Asn Ala Leu Phe
 1 5 10 15
 Ile Gly Leu Ala Leu Phe Ala Cys Thr Ser Gly Ala Val Ala Gln Thr
 20 25 30
 Ile Lys Pro Ile Glu Thr Pro Val Pro Val Arg Pro Ala Gly Gln Lys
 35 40 45
 Asp Val Val Gly Leu Thr Thr Pro Lys Leu Asp Val Val Arg Val Gly
 50 55 60
 Phe Ile Gly Leu Gly Met Arg Gly Pro Gly Ala Val Glu Arg Phe Thr
 65 70 75 80
 His Ile Pro Gly Thr Gln Ile Val Ala Leu Cys Asp Leu Ile Pro Glu
 85 90 95
 Arg Val Ala Gly Ala Gln Lys Ile Leu Thr Lys Ala Asn Leu Pro Glu
 100 105 110
 Ala Ala Ser Tyr Ser Gly Ser Glu Asp Ala Trp Lys Lys Leu Cys Glu
 115 120 125
 Arg Lys Asp Ile Asp Leu Val Tyr Ile Ala Thr Asp Trp Lys His His
 130 135 140
 Ala Gln Met Ala Ile Tyr Ala Met Glu His Gly Lys His Val Ala Ile
 145 150 155 160
 Glu Val Pro Ser Ala Met Thr Leu Asp Glu Ile Trp Ala Leu Ile Asn
 165 170 175
 Thr Ser Glu Lys Thr Arg Lys His Cys Met Gln Leu Glu Asn Cys Val
 180 185 190
 Tyr Asp Phe Phe Glu Leu Thr Thr Leu Asn Met Ala Gln Gln Gly Val
 195 200 205
 Phe Gly Glu Val Leu His Thr Glu Gly Ala Tyr Ile His Asn Leu Glu
 210 215 220
 Asp Phe Trp Pro Tyr Tyr Trp Lys His Trp Arg Met Asp Tyr Asn Gln
 225 230 235 240

Asn His Arg Gly Asp Val Tyr Ala Thr His Gly Met Gly Pro Ala Cys
 245 250 255
 Gln Leu Leu Asp Ile His Arg Gly Asp Lys Met Asn Tyr Leu Val Ser
 260 265 270
 Met Asp Thr Lys Ala Val Asn Gly Pro Ala Tyr Ile Lys Lys Thr Thr
 275 280 285
 Gly Lys Glu Val Lys Asp Phe Gln Asn Gly Asp Gln Thr Ser Thr Leu
 290 295 300
 Ile Arg Thr Glu Lys Gly Lys Thr Ile Leu Ile Gln His Asn Val Met
 305 310 315 320
 Thr Pro Arg Pro Tyr Ser Arg Met Tyr Gln Val Val Gly Ala Asp Gly
 325 330 335
 Tyr Ala Ser Lys Tyr Pro Ile Glu Glu Tyr Cys Met Arg Pro Thr Gln
 340 345 350
 Ile Ala Ser Asn Asp Val Pro Asn His Glu Lys Leu Asn Ala His Gly
 355 360 365
 Ser Val Pro Ala Asp Val Lys Lys Thr Leu Met Asp Lys Tyr Lys His
 370 375 380
 Pro Ile His Lys Glu Leu Glu Glu Thr Ala Lys Lys Val Gly Gly His
 385 390 395 400
 Gly Gly Met Asp Tyr Ile Met Asp Tyr Arg Leu Val Tyr Cys Leu Arg
 405 410 415
 Asn Gly Leu Pro Leu Asp Met Asp Val Tyr Asp Leu Ala Glu Trp Cys
 420 425 430
 Cys Met Ala Asp Leu Thr Lys Leu Ser Ile Glu Asn Ser Ser Ala Pro
 435 440 445
 Val Ala Ile Pro Asp Phe Thr Arg Gly Ala Trp Asn Lys Val Lys Gly
 450 455 460
 Tyr Arg His Ala Phe Ala Lys
 465 470

<210> 9443

<211> 319

<212> PRT

<213> B.fragilis

<400> 9443

Asp Ser Tyr Pro Asp Ser Arg Gln Ile Ile Ile Lys Arg Gln Gln Cys
 1 5 10 15
 Leu Gln Leu Ser Thr Pro Asn Asp Gln Ser Phe Ser Pro Arg Arg Ser
 20 25 30
 Tyr Glu Lys Cys Tyr Phe Thr Gly Gly Phe Gln Pro Ser Ser Val Gln
 35 40 45
 Ala Ala Asp Ile Trp Tyr Leu Tyr Thr Leu Tyr Gly Tyr Glu Ile Asn
 50 55 60
 Ile Asn Leu Thr Ser Ser Pro Phe Met Gln Lys Tyr Gly Leu Ile Gly
 65 70 75 80
 Tyr Pro Leu Lys His Ser Phe Ser Ile Gly Phe Phe Asn Glu Lys Phe
 85 90 95
 Lys Ser Glu Gly Ile Asp Ala Glu Tyr Val Asn Phe Glu Ile Pro Glu
 100 105 110
 Ile Asn Asp Phe Met Glu Val Ile Glu Glu Asn Pro Asn Leu Cys Gly
 115 120 125
 Leu Asn Val Thr Ile Pro Tyr Lys Glu Gln Val Ile Pro Phe Leu Asp
 130 135 140
 Glu Leu Asp Lys Asp Thr Ala Lys Ile Gly Ala Val Asn Val Ile Lys
 145 150 155 160
 Ile Ile Arg Thr Pro Lys Arg Lys Ile Lys Leu Val Gly Tyr Asn Ser
 165 170 175

Asp Ile Ile Gly Phe Ser Gln Ser Ile Gln Pro Leu Leu Gln Pro Tyr
 180 185 190
 His Lys Lys Ala Leu Ile Leu Gly Thr Gly Gly Ser Ser Lys Ala Ile
 195 200 205
 Tyr His Gly Leu Lys Asn Leu Gly Ile Asp Ser Val Phe Val Ser Arg
 210 215 220
 Thr Lys Lys Glu Gly Met Leu Thr Tyr Glu Glu Leu Thr Pro Glu Val
 225 230 235 240
 Met Ala Glu His Thr Val Ile Val Asn Cys Thr Pro Val Gly Met Tyr
 245 250 255
 Pro Lys Val Asp Phe Cys Pro Ala Ile Pro Tyr Glu Leu Leu Thr Pro
 260 265 270
 Asn His Leu Leu Tyr Asp Leu Leu Tyr Asn Pro Asn Ile Thr Leu Phe
 275 280 285
 Met Lys Lys Gly Glu Glu His Gly Ala Val Thr Lys Asn Gly Leu Glu
 290 295 300
 Met Leu Leu Leu Gln Ala Phe Ala Ala Trp Glu Ile Trp Asn Lys
 305 310 315

<210> 9444

<211> 263

<212> PRT

<213> B.fragilis

<400> 9444

Asn Pro Cys Pro Ile Ile Arg Leu His Asn Pro Ser Met Lys Met Lys
 1 5 10 15
 Ile Ser Lys Pro Ser Lys Gln Gly Val Ile Arg Glu Thr Lys Asp Tyr
 20 25 30
 Leu Met Ile Ala Leu Gly Met Ile Leu Tyr Gly Ile Gly Trp Thr Leu
 35 40 45
 Phe Leu Leu Pro Asn Asp Ile Thr Thr Gly Gly Val Pro Gly Ile Ala
 50 55 60
 Ser Ile Val Tyr Phe Ala Thr Gly Phe Pro Val Gln Tyr Thr Tyr Phe
 65 70 75 80
 Ala Ile Asn Ala Val Leu Leu Met Val Ser Leu Lys Val Leu Gly Phe
 85 90 95
 Arg Phe Ser Leu Lys Thr Ile Phe Gly Val Phe Thr Leu Thr Phe Phe
 100 105 110
 Leu Ser Val Ile Gln Lys Leu Thr Ala Asn Val Thr Leu Leu His Asp
 115 120 125
 Gln Pro Phe Met Ala Cys Val Leu Gly Ala Ser Phe Cys Gly Ser Gly
 130 135 140
 Ile Gly Ile Ala Phe Ser Ala Asn Gly Ser Thr Gly Gly Thr Asp Ile
 145 150 155 160
 Ile Ala Ala Val Ile Asn Lys Tyr Arg Asp Ile Thr Leu Gly Arg Val
 165 170 175
 Met Leu Ile Cys Asp Leu Ile Ile Ile Ser Ser Ser Tyr Phe Val Leu
 180 185 190
 Lys Asp Trp Glu Lys Val Val Tyr Gly Tyr Val Thr Leu Tyr Val Cys
 195 200 205
 Ser Phe Val Leu Asp Gln Val Val Asn Ser Ala Arg Gln Ser Val Gln
 210 215 220
 Phe Phe Ile Ile Ser Asn Lys Tyr Glu Glu Ile Gly Gln Arg Ile Asn
 225 230 235 240
 Glu Tyr Pro His Arg Gly Val Thr Ile Ile Asn Gly Thr Gly Ile Leu
 245 250 255
 Tyr Arg Ala Arg Ala Lys Arg
 260

<210> 9445
 <211> 274
 <212> PRT
 <213> B.fragilis

<400> 9445

Arg Gln Leu Pro Gly Thr Arg Arg Arg Arg Ser Phe His Arg Arg Ile
 1 5 10 15
 Arg Arg Arg Lys Phe Trp Ile Arg Arg Trp Arg Arg Phe Gln Arg Trp
 20 25 30
 Lys Leu Arg Arg Arg Phe Arg Trp Arg Trp Arg Cys Arg Leu Thr Phe
 35 40 45
 Leu Lys Lys Ser Ile His Lys Ile Cys Glu Ser Gly Ile Lys Val Phe
 50 55 60
 Ala Pro Ser Asp Leu His Glu Ser Leu Ile Ser Asn Thr Lys Arg Asn
 65 70 75 80
 Asn Met Lys Lys Ser Val Ile Ile Leu Ile Ala Val Val Ala Val Ile
 85 90 95
 Ile Ile Trp Ala Ile Ser Ala Tyr Asn Gly Leu Val Ser Met Asp Glu
 100 105 110
 Asn Val Ser Ser Gln Trp Ala Asn Val Glu Thr Gln Tyr Gln Arg Arg
 115 120 125
 Ala Asp Leu Ile Pro Asn Leu Val Asn Thr Val Lys Gly Tyr Ala Ser
 130 135 140
 His Glu Lys Glu Thr Leu Glu Gly Val Val Glu Ala Arg Ser Lys Ala
 145 150 155 160
 Thr Gln Ile Lys Val Asp Ala Asn Asp Leu Thr Pro Glu Lys Leu Ala
 165 170 175
 Glu Tyr Gln Lys Ala Gln Gly Ala Val Thr Ser Ala Leu Gly Lys Leu
 180 185 190
 Leu Ala Ile Thr Glu Asn Tyr Pro Asp Leu Lys Ala Asn Gln Asn Phe
 195 200 205
 Leu Glu Leu Gln Ala Gln Leu Glu Gly Thr Glu Asn Arg Ile Asn Val
 210 215 220
 Ala Arg Lys Asn Phe Asn Asp Ala Ala Gln Ala Tyr Asn Thr Ser Ile
 225 230 235 240
 Arg Arg Phe Pro Lys Ser Ile Phe Ala Ser Val Phe Gly Phe Glu Lys
 245 250 255
 Arg Thr Tyr Phe Glu Ala Thr Glu Gly Thr Glu Lys Ala Pro Glu Val
 260 265 270
 Lys Phe

<210> 9446
 <211> 862
 <212> PRT
 <213> B.fragilis

<400> 9446

Arg Lys Ile Pro Val Leu Arg Phe Arg Lys Arg Asn Lys His Val Pro
 1 5 10 15
 Ile Gly Ala Ser Ile Asn Val Gln Ile Cys Gln Cys Phe Asn Ile Met
 20 25 30
 Ser Tyr Thr Ile Glu Ser Ile Val Glu Lys Ile Gly Ala Arg Arg Leu
 35 40 45
 Gly Asn Lys Pro Ala Ala Ile Asp Trp Leu Leu Thr Asp Ser Arg Ser
 50 55 60
 Leu Cys Phe Pro Glu Glu Thr Leu Phe Phe Ala Ile Pro Thr Lys Arg

65	70	75	80
Asn Asn Gly Ala Arg Tyr Ile Pro Asp Leu Tyr Glu Arg Gly Val Arg			
	85	90	95
Asn Phe Val Val Thr Ser Glu Asp Phe Lys Gly Leu Thr Met Asp Ser			
	100	105	110
Glu Gln Leu Lys Val Thr Met Ala Gln Glu Cys Asn Phe Leu Ile Ala			
	115	120	125
Pro Asn Thr Leu Lys Ala Leu Gln Lys Leu Ala Glu Gln His Arg Gly			
	130	135	140
Ser Phe Gln Ile Pro Val Val Gly Ile Thr Gly Ser Asn Gly Lys Thr			
145	150	155	160
Ile Val Lys Glu Trp Leu His Gln Leu Leu Ser Pro Asp Arg Val Ile			
	165	170	175
Val Arg Ser Pro Arg Ser Tyr Asn Ser Gln Ile Gly Val Pro Leu Ser			
	180	185	190
Val Trp Gln Met Asn Glu Glu Ser Glu Leu Gly Ile Phe Glu Ala Gly			
	195	200	205
Ile Ser Glu Met Gly Glu Met Arg Pro Leu Gln Asn Met Ile Lys Pro			
	210	215	220
Thr Ile Gly Ile Leu Thr Asn Ile Gly Gly Ala His Gln Glu Asn Phe			
225	230	235	240
Phe Ser Leu Gln Glu Lys Cys Met Glu Lys Leu Ser Leu Phe Lys Asp			
	245	250	255
Cys Asp Val Val Ile Tyr Asn Gly Asp Asn Glu Met Ile Ser Asn Cys			
	260	265	270
Val Gly Lys Ser Met Leu Thr Ala Arg Glu Ile Ala Trp Ser Met Arg			
	275	280	285
Asp Ile Glu Arg Pro Leu Tyr Ile Ser Arg Val Glu Lys Lys Glu Asp			
	290	295	300
His Thr Val Ile Ser Tyr Arg Tyr Leu Glu Met Asp Asn Thr Phe Cys			
305	310	315	320
Ile Pro Phe Ile Asp Asp Ala Ser Ile Glu Asn Ser Leu Asn Cys Leu			
	325	330	335
Ala Ala Cys Leu Tyr Leu Met Val Pro Ala Asp Gln Ile Thr Glu Arg			
	340	345	350
Met Ala Arg Leu Glu Pro Val Ala Met Arg Leu Glu Val Lys Asp Gly			
	355	360	365
Lys Asn Asn Cys Ile Leu Ile Asn Asp Ser Tyr Asn Ser Asp Leu Ala			
	370	375	380
Ser Leu Asp Ile Ala Leu Asp Phe Leu Tyr Arg Arg Ser Gln Ser Lys			
385	390	395	400
Gly Leu Lys Arg Thr Leu Ile Leu Ser Asp Ile Leu Glu Thr Gly Gln			
	405	410	415
Ser Thr Thr Thr Leu Tyr Arg Lys Val Ala Gln Leu Val His Ser Arg			
	420	425	430
Gly Ile Glu Lys Ile Ile Gly Val Gly Ala Glu Ile Ser Ser Cys Ala			
	435	440	445
Ser Lys Phe Asp Ile Glu Lys Tyr Phe Phe Pro Asp Thr Lys Ala Leu			
	450	455	460
Leu Ala Ser Asp Val Ile Lys Lys Leu Arg Asn Glu Ile Ile Leu Ile			
465	470	475	480
Lys Gly Ser Arg Asn Phe Gly Phe Asp Leu Val Ser Glu Glu Leu Glu			
	485	490	495
Leu Lys Val His Glu Thr Ile Leu Glu Val Asn Leu Gly Ala Met Val			
	500	505	510
Ala Asn Leu Asn His Tyr Arg Ser Met Leu Lys Pro Glu Thr Lys Met			
	515	520	525
Val Cys Met Val Lys Ala Ser Ala Tyr Gly Ala Gly Ser Tyr Glu Ile			
	530	535	540

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Ala Lys Thr Leu Gln Glu His His Ala Asp Tyr Leu Ala Val Ala Val
 545 550 555 560
 Ala Asp Glu Gly Ser Asp Leu Arg Lys Ala Gly Ile Thr Ala Ser Ile
 565 570 575
 Ile Ile Met Asp Pro Glu Leu Thr Ala Phe Lys Thr Met Phe Asp Tyr
 580 585 590
 Lys Leu Glu Pro Glu Val Tyr Asn Phe His Leu Leu Asp Ala Leu Ile
 595 600 605
 Lys Ala Ala Glu Lys Glu Gly Ile Thr Asn Phe Pro Ile His Val Lys
 610 615 620
 Leu Asp Thr Gly Met His Arg Leu Gly Phe Glu Glu Lys Asp Ile Pro
 625 630 635 640
 Gln Leu Ile Arg Arg Leu Lys Asn Gln Asn Ala Leu Ile Pro Arg Ser
 645 650 655
 Val Phe Ser His Phe Val Gly Ser Asp Ser Ala Gln Phe Asp Ala Phe
 660 665 670
 Thr Arg Gln Gln Ile Glu Arg Tyr Glu Lys Met Ser Lys Glu Leu Gln
 675 680 685
 Asp Ala Phe Pro His Lys Ile Leu Arg His Ile Cys Asn Thr Ala Gly
 690 695 700
 Ile Glu Arg Phe Pro Gly Ala Gln Phe Asp Met Val Arg Leu Gly Ile
 705 710 715 720
 Gly Leu Tyr Gly Ile Ser Pro Ile Asp Asn Ser Ile Ile Asn Asn Val
 725 730 735
 Ser Thr Leu Lys Thr Thr Ile Leu Gln Ile Arg Asp Val Ala Glu Glu
 740 745 750
 Asp Thr Val Gly Tyr Ser Arg Lys Gly His Leu Ile Arg Pro Ser Arg
 755 760 765
 Ile Ala Ala Ile Pro Ile Gly Tyr Ala Asp Gly Leu Asn Arg His Leu
 770 775 780
 Gly Cys Gly His Gly Tyr Cys Leu Val Asn Gly Lys Lys Ala Pro Tyr
 785 790 795 800
 Val Gly Asn Ile Cys Met Asp Val Cys Met Ile Asp Val Thr Asp Ile
 805 810 815
 Asp Cys Arg Glu Gly Asp Gln Ala Ile Ile Phe Gly Asp Glu Leu Pro
 820 825 830
 Ile Thr Ala Leu Ser Asp Ala Leu Glu Thr Ile Pro Tyr Glu Val Leu
 835 840 845
 Thr Gly Ile Ser Thr Arg Val Lys Arg Val Tyr Tyr Gln Asp
 850 855 860

<210> 9447

<211> 96

<212> PRT

<213> B.fragilis

<400> 9447

Lys Asn Glu Thr Ala Leu Leu Ile Ile Cys Lys Phe Arg Tyr Lys Asn
 1 5 10 15
 Pro Pro Ala Leu Ala Leu Val Asp His Asp Ile Arg Gln Glu Ser Gly
 20 25 30
 Asp Phe Tyr Ile Pro Thr Phe Phe Ile Phe Leu Leu Lys Pro Ile Ser
 35 40 45
 Gly Pro Val Ile Phe Val Thr Tyr Asn Phe Asp Arg Lys Val Ala Phe
 50 55 60
 Thr Gln Tyr Ile Asn Tyr Lys Thr Lys Tyr Leu Phe Val Tyr Ile Pro
 65 70 75 80
 Lys Ala Thr Val Glu Asn Leu Phe Gln Ala Ala Thr Lys Val His Leu
 85 90 95

<210> 9448
 <211> 169
 <212> PRT
 <213> B.fragilis

<400> 9448

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Ile Pro Ile Ala Met Ser Ser Asn Ile Phe Leu Thr Ile Ala Ile Val
1      5      10      15
Thr Thr Gly Ile Phe Ala Val Gln Phe Ile Leu Ser Ile Phe Phe Gly
20      25      30
Asp Ile Asp Ala Asp Ala Asp Ile Asp Thr Asp Ile Ser Ser Val Val
35      40      45
Ser Phe Lys Gly Leu Thr His Phe Gly Ile Gly Phe Gly Trp Tyr Met
50      55      60
Tyr Leu Gln His Asn Thr Glu Ile Gln Thr Tyr Leu Thr Gly Val Ala
65      70      75      80
Ile Gly Leu Ile Phe Val Phe Ala Val Trp Phe Leu Tyr Lys Lys Ala
85      90      95
Tyr Gln Leu Gln Gln Thr Thr His Ser Glu Arg Thr Glu Gln Leu Val
100     105     110
Gly Arg Glu Cys Thr Ile Tyr Phe Lys Gln Asn Glu Lys Lys Tyr Thr
115     120     125
Val Gln Ile Ser Arg Asp Gly Ala Met Arg Glu Ile Asp Val Val Thr
130     135     140
Glu Ser Gly Lys Ser Tyr Gln Thr Gly Asp Lys Ala Thr Ile Thr Ser
145     150     155     160
Tyr Lys Asp Gly Thr Leu Tyr Ile Gln
165

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<210> 9449
 <211> 525
 <212> PRT
 <213> B.fragilis

<400> 9449

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Leu Asn Asp Ala Asp Met Met Gly Leu Phe Phe Val Tyr Ile Val Lys
1      5      10      15
Ser Ser Val Cys Leu Ala Gly Phe Tyr Leu Phe Tyr Arg Leu Leu Leu
20      25      30
Ser Lys Glu Thr Phe His Arg Phe Asn Arg Ile Ala Leu Leu Thr Leu
35      40      45
Leu Leu Leu Ser Leu Leu Leu Pro Leu Val Gln Leu Thr Thr Ile Glu
50      55      60
Gln Thr Glu Val His Gln Thr Met Leu Thr Ile Glu Gln Leu Leu Met
65      70      75      80
Met Ala Asp Met Pro Val Ser Glu Val Thr Pro Ala Glu Ala Val Thr
85      90      95
Leu Ser Gly Ile Gln Ile Leu Leu Met Val Tyr Leu Ser Gly Val Leu
100     105     110
Phe Phe Ala Cys Arg His Ile Tyr Ser Leu Gly Arg Leu Leu Met Leu
115     120     125
Leu Arg Ser Gly Glu Lys Glu Lys Met Glu Asn Gly Met Thr Leu Val
130     135     140
Ile His Gln Gln Lys Ile Ser Pro Phe Ser Trp Met Lys Tyr Ile Val
145     150     155     160
Ile Ser Lys Val Asp Leu Glu Glu Asp Gly Arg Glu Ile Leu Ile His
165     170     175
Glu Ala Ala His Val Arg Asn Arg His Ser Val Asp Leu Leu Ile Ala

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[illegible]

<400> 9450

Ile	Ser	Thr	Ala	Phe	Leu	Leu	Ile	Met	Ala	Glu	Ile	Lys	Glu	Leu	Thr
1				5					10					15	
Phe	Trp	Asp	His	Leu	Asp	Glu	Leu	Arg	Arg	Val	Leu	Phe	Arg	Ile	Ile
			20					25					30		
Gly	Val	Trp	Phe	Val	Leu	Ala	Val	Gly	Tyr	Phe	Ile	Ala	Met	Pro	Tyr
		35					40					45			
Leu	Phe	Asp	Arg	Val	Ile	Leu	Ala	Pro	Cys	His	Asn	Asp	Phe	Ile	Phe
	50					55					60				
Tyr	His	Leu	Leu	Arg	Asp	Ile	Gly	Gln	Ala	Phe	Asp	Leu	Thr	Asp	Asp

65					70					75				80
Phe	Phe	Thr	Arg	Glu	Phe	Lys	Val	Lys	Leu	Val	Asn	Ile	Asn	Leu
				85					90				95	
Ala	Pro	Phe	Phe	Ile	His	Met	Ser	Thr	Ala	Phe	Trp	Met	Ser	Val
			100					105					110	
Thr	Ala	Thr	Pro	Tyr	Leu	Phe	Phe	Glu	Ile	Trp	Arg	Phe	Ile	Arg
		115					120					125		Pro
Ala	Leu	Tyr	Pro	Asn	Glu	Arg	Lys	Gly	Val	Arg	Lys	Ala	Leu	Thr
	130					135					140			Ile
Gly	Thr	Val	Met	Phe	Phe	Ile	Gly	Val	Leu	Leu	Gly	Tyr	Phe	Met
145					150					155				160
Tyr	Pro	Leu	Thr	Leu	Arg	Phe	Leu	Ser	Thr	Tyr	Gln	Leu	Ser	Ala
			165						170					175
Ile	Glu	Asn	Gln	Ile	Ser	Leu	Asn	Ser	Tyr	Ile	Asp	Asn	Phe	Met
		180					185						190	Met
Leu	Val	Leu	Cys	Met	Gly	Leu	Ala	Phe	Glu	Leu	Pro	Leu	Val	Thr
		195					200					205		Trp
Leu	Leu	Ser	Leu	Leu	Gly	Leu	Val	Asn	Lys	Ser	Phe	Leu	Arg	Lys
	210					215					220			Tyr
Arg	Arg	His	Ala	Ile	Val	Leu	Ile	Val	Ile	Ala	Ala	Ala	Val	Ile
225					230				235					240
Pro	Thr	Gly	Asp	Pro	Phe	Thr	Leu	Ser	Ile	Val	Ala	Ile	Pro	Leu
			245					250					255	Tyr
Leu	Leu	Tyr	Glu	Met	Ser	Ile	Leu	Met	Ile	Lys	Asp	Lys	Asn	Arg
			260					265					270	Ser

<210> 9451

<211> 1043

<212> PRT

<213> B.fragilis

<400> 9451

Ser	Lys	Tyr	Tyr	Gln	Leu	Leu	Asn	Gly	Thr	Trp	Lys	Phe	Tyr	Phe	Val
1				5					10					15	
Asp	Ser	Tyr	Lys	Asn	Leu	Pro	Ala	Asn	Ile	Thr	Asp	Pro	Ala	Ile	Ser
			20					25				30			
Thr	Ala	Asp	Trp	Ala	Asp	Ile	Lys	Val	Pro	Gly	Asn	Trp	Glu	Val	Gln
		35				40					45				
Gly	His	Gly	Val	Ala	Ile	Tyr	Thr	Asn	His	Gly	Tyr	Glu	Phe	Gln	Pro
	50				55					60					
Arg	Asn	Pro	Gln	Pro	Pro	Thr	Leu	Pro	Glu	Ala	Asn	Pro	Val	Gly	Val
65				70					75					80	
Tyr	Arg	Arg	Asp	Ile	Asp	Ile	Pro	Ala	Asp	Trp	Asp	Gly	Arg	Asp	Ile
			85					90					95		
Tyr	Leu	His	Leu	Ala	Gly	Ala	Lys	Ser	Gly	Val	Tyr	Val	Tyr	Ile	Asn
		100						105					110		
Gly	Gln	Glu	Val	Gly	Tyr	Ser	Glu	Asp	Ser	Lys	Asn	Ser	Ala	Glu	Phe
		115					120					125			
Leu	Ile	Asn	Lys	Phe	Val	Lys	Pro	Gly	Lys	Asn	Val	Leu	Thr	Leu	Lys
	130					135					140				
Ile	Tyr	Arg	Trp	Ser	Thr	Gly	Ser	Tyr	Leu	Glu	Cys	Gln	Asp	Phe	Trp
145				150					155					160	
Arg	Ile	Ser	Gly	Ile	Glu	Arg	Asp	Val	Phe	Leu	Tyr	Ser	Gln	Pro	Lys
			165					170						175	
Ala	Ala	Leu	Lys	Asp	Phe	Arg	Val	Thr	Ser	Thr	Leu	Asp	Asp	Thr	Tyr
		180						185					190		
Lys	Asp	Gly	Ile	Phe	Lys	Leu	Gly	Val	Asp	Leu	Arg	Asn	Asn	Gly	Ser
	195						200					205			
Thr	Ala	Gly	Asn	Met	Thr	Leu	Val	Tyr	Glu	Leu	Leu	Asp	Ala	Asn	Gly

Year	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100
1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100	

Glu Pro Gly Glu Arg Thr Phe Ala Thr Gly Gly Pro Ala Leu Lys Val
 690 695 700
 Ser Ala Glu Gly Asn Glu Leu Thr Ala Ser Ser Ser Lys Val Asn Phe
 705 710 715 720
 Val Phe Asp Lys Lys Thr Gly Leu Val Ser Ser Tyr Lys Val Gly Gly
 725 730 735
 Thr Glu Tyr Phe Lys Asp Gly Phe Gly Leu Gln Pro Asn Phe Trp Arg
 740 745 750
 Ala Pro Asn Asp Asn Asp Tyr Gly Asn Gly Asn Pro Lys Arg Leu Gln
 755 760 765
 Val Trp Lys Gln Ser Ser Lys Asn Phe Asn Val Val Asp Ala Asn Ile
 770 775 780
 Val Met Asp Gly Lys Asp Ala Val Leu Thr Ala Asn Tyr Leu Leu Ala
 785 790 795 800
 Ala Gly Asn Leu Tyr Ile Val Thr Tyr Arg Ile Ser Pro Ser Gly Val
 805 810 815
 Val Lys Ala Asp Phe Thr Phe Thr Ser Thr Asp Met Glu Ala Ala Lys
 820 825 830
 Thr Glu Ala Ser Glu Ala Thr Leu Met Ala Thr Phe Thr Pro Gly Ser
 835 840 845
 Asp Ala Ala Arg Lys Ala Ala Ser Lys Leu Glu Val Pro Arg Ile Gly
 850 855 860
 Val Arg Phe Arg Leu Pro Ala Glu Met Asn Gln Val Glu Tyr Phe Gly
 865 870 875 880
 Arg Gly Pro Glu Glu Asn Tyr Ile Asp Arg Asn Ala Gly Thr Leu Ile
 885 890 895
 Asp Leu Tyr Lys Thr Thr Ala Asp Gln Met Tyr Phe Pro Tyr Val Arg
 900 905 910
 Pro Gln Glu Asn Gly His His Thr Asp Thr Arg Trp Leu Thr Leu Asn
 915 920 925
 Lys Lys Gly Gly Lys Gly Leu Thr Ile Tyr Ala Asp Lys Thr Ile Gly
 930 935 940
 Phe Asn Ala Leu Arg Asn Ser Val Glu Asp Phe Asp Gly Glu Glu Thr
 945 950 955 960
 Val Ser Arg Pro Tyr Gln Trp Leu Asn Arg Asp Ala Gly Glu Leu Val
 965 970 975
 His Asp Glu Ser Lys Ala Lys Asp Gln Leu Pro Arg Lys Thr His Ile
 980 985 990
 Asn Asp Ile Thr Pro Arg Asn Phe Val Glu Val Cys Val Asp Met Lys
 995 1000 1005
 Gln Gln Gly Val Ala Gly Tyr Asn Ser Trp Gly Ala Arg Pro Glu Pro
 1010 1015 1020
 Gly Tyr Asn Ile Pro Ala Asn Gln Glu Tyr Lys Trp Gly Phe Thr Ile
 1025 1030 1035 1040
 Val Pro Arg

<210> 9452

<211> 100

<212> PRT

<213> B.fragilis

<400> 9452

Asp Lys Leu Tyr Cys Glu Asp Ala Cys Cys Asp Asn Ser Asn Gly Glu
 1 5 10 15
 Glu Asn Ile Thr Thr His Gly Asn Arg Tyr Leu Met Ile Tyr Phe Ile
 20 25 30
 Asp Ile Val Pro Lys Tyr Thr Pro Leu Ile Phe Ile Cys Lys Gly Lys
 35 40 45

Leu Ile Lys Lys Trp Lys Asn Arg Lys Met Asn Val Tyr Leu Tyr Pro
 50 55 60
 Lys Leu Leu Asn Arg Asn Arg Lys Asn Tyr Glu Asp Asn Pro Thr Leu
 65 70 75 80
 Cys Ser Glu Ser Val Ala Leu Phe Ile Arg Val Gly Cys Leu Cys Thr
 85 90 95
 Arg Ala Tyr Leu
 100

<210> 9453

<211> 397

<212> PRT

<213> B.fragilis

<400> 9453

Ile Ser Ser His Asn Ser Phe Ile Pro Leu Ser Tyr Lys Lys Lys Ala
 1 5 10 15
 Tyr Phe Leu Ile His Thr Asn Tyr Thr Phe His Ile Phe Ala Val Phe
 20 25 30
 Asn Thr His His Ile Phe Asn Asp Glu Asn Lys Lys Thr Ile Arg Gln
 35 40 45
 Tyr Glu Ile Met Ile Asn Thr Leu Thr Ser Leu Arg Phe Ile Phe Ala
 50 55 60
 Ile Met Val Phe Gly Ala His Cys Tyr Val Ile Asp Asn Val Phe Asn
 65 70 75 80
 Thr His Phe Phe Lys Glu Gly Phe Val Gly Val Ser Phe Phe Phe Val
 85 90 95
 Leu Ser Gly Phe Ser Ile Ala Tyr Asn Tyr Gln Glu Lys Leu Lys Asp
 100 105 110
 Asp Lys Ile Asp Lys Arg Thr Phe Trp Val Ala Arg Ile Ala Arg Ile
 115 120 125
 Tyr Pro Leu His Trp Leu Thr Leu Phe Ile Ala Ala Ile Leu Gly Ser
 130 135 140
 Tyr Val Ile Ala Ser Gly Thr Leu Asp Trp Leu Lys His Phe Leu Ala
 145 150 155 160
 Ser Leu Thr Leu Thr Asn Ala Tyr Ile Pro Arg Ala Asp Tyr Phe Phe
 165 170 175
 Ser Phe Asn Ser Pro Ser Trp Ser Leu Cys Cys Glu Gln Leu Phe Tyr
 180 185 190
 Ile Cys Phe Pro Phe Leu Ile Pro Leu Ala Lys Asn Tyr Lys Tyr Leu
 195 200 205
 Leu Ser Val Phe Gly Ile Val Ala Ile Leu Ile Val Val Gly Met Tyr
 210 215 220
 Phe Thr Pro Glu Asp Glu Ile Lys Gly Phe Trp Tyr Val Asn Pro Ile
 225 230 235 240
 Thr Arg Phe Pro Asp Phe Ile Val Gly Met Leu Leu Phe Gln Leu Tyr
 245 250 255
 Glu Arg Leu Lys Asn Lys Asn Ile Thr Ala Leu Gln Gly Ser Ile Ile
 260 265 270
 Glu Ile Ser Ser Ile Ile Leu Phe Leu Ile Phe Tyr Leu Tyr Ala Ala
 275 280 285
 Asp Ile Pro Lys Val Tyr Arg Tyr Ser Cys Tyr Tyr Trp Leu Pro Val
 290 295 300
 Ala Val Ile Leu Ile Ser Phe Ser Leu Gln Lys Gly Ile Phe Ser Arg
 305 310 315 320
 Ile Leu Ser Asn Arg Phe Leu Val Ile Gly Gly Glu Ile Ser Tyr Ser
 325 330 335
 Phe Tyr Leu Ile His Leu Phe Val Leu Leu Thr Tyr Ser Glu Trp Gln
 340 345 350

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<210> 9454
<211> 85
<212> PRT
<213> B.fragilis
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<210> 9455
<211> 262
<212> PRT
<213> B.fragilis
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[illegible]

210	215	220
Ser Gly Leu Asn Thr	Ser Asp Ala Leu Thr	Lys Val Glu Ala Glu Val
225	230	235
Pro Ala Ser Pro Glu	Ile Glu Tyr Ile Val	Asp Phe Ile Arg Asn Ser
	245	250
Glu Arg Gly Ile Ile Arg		255
260		

<210> 9456

<211> 389

<212> PRT

<213> B.fragilis

<400> 9456

Leu Met Ser Asn Gln Arg Tyr Met Met Arg Gly Val Ser Ala Ser Lys	
1 5 10 15	
Glu Asp Val His Asn Ala Ile Lys Asn Ile Asp Lys Gly Ile Phe Pro	
20 25 30	
Gln Ala Phe Cys Lys Ile Ile Pro Asp Ile Leu Gly Gly Asp Pro Glu	
35 40 45	
Tyr Cys Asn Ile Met His Ala Asp Gly Ala Gly Thr Lys Ser Ser Leu	
50 55 60	
Ala Tyr Met Tyr Trp Lys Glu Thr Gly Asp Leu Ser Val Trp Lys Gly	
65 70 75 80	
Ile Ala Gln Asp Ala Leu Ile Met Asn Ile Asp Asp Leu Leu Cys Val	
85 90 95	
Gly Ala Val Asp Asn Ile Leu Val Ser Ser Thr Ile Gly Arg Asn Lys	
100 105 110	
Leu Leu Ile Pro Gly Glu Val Ile Ser Ala Ile Ile Asn Gly Thr Asp	
115 120 125	
Glu Leu Leu Ala Glu Leu Arg Glu Met Gly Val Gly Val Tyr Ala Thr	
130 135 140	
Gly Gly Glu Thr Ala Asp Val Gly Asp Leu Val Arg Thr Ile Ile Val	
145 150 155 160	
Asp Ser Thr Val Thr Cys Arg Met Lys Arg Ala Asp Val Ile Asn Asn	
165 170 175	
Ala Asn Ile Arg Pro Gly Asp Val Ile Val Gly Leu Ala Ser His Gly	
180 185 190	
Gln Ala Thr Tyr Glu Lys Glu Tyr Asn Gly Gly Met Gly Ser Asn Gly	
195 200 205	
Leu Thr Ser Ala Arg His Asp Val Phe Ala Lys Tyr Leu Ala Glu Lys	
210 215 220	
Tyr Pro Glu Ser Tyr Asp Ala Ala Val Pro Glu Glu Leu Val Tyr Ser	
225 230 235 240	
Gly Gly Leu Lys Leu Thr Asp Thr Val Glu Gly Ser Pro Ile Asp Ala	
245 250 255	
Gly Lys Leu Val Leu Ser Pro Thr Arg Thr Tyr Ala Pro Val Val Lys	
260 265 270	
Lys Leu Leu Asp Ala Leu Arg Pro Glu Ile His Gly Met Val His Cys	
275 280 285	
Ser Gly Gly Ala Gln Thr Lys Val Leu His Phe Val Gly Asp Val Arg	
290 295 300	
Val Val Lys Asp Asn Leu Phe Pro Val Pro Pro Leu Phe Arg Thr Ile	
305 310 315 320	
Gln Glu Gln Ser Gly Thr Asp Trp Ala Glu Met Tyr Lys Val Phe Asn	
325 330 335	
Met Gly His Arg Leu Glu Val Tyr Leu Ser Pro Glu His Ala Ala Glu	
340 345 350	
Val Ile Ala Ile Ser Glu Ser Phe Gly Ile Pro Ala Gln Ile Val Gly	

355 360 365
 Arg Ile Glu Glu Ser Asp Lys Lys Glu Leu Ile Ile Lys Ser Glu Phe
 370 375 380
 Gly Glu Phe Arg Tyr
 385

<210> 9457
 <211> 86
 <212> PRT
 <213> B.fragilis

<400> 9457
 Val Pro Leu Lys Asp Val Leu Ser Lys Ile Phe Val Lys Leu Ser Pro
 1 5 10 15
 Ile Thr Ser Ser Trp Ser Arg Val Ser Ala Leu Lys Glu Val Leu Leu
 20 25 30
 Glu Glu Val Cys Lys Tyr Gly Met Asn Ser Thr Cys Gly Leu Ile Val
 35 40 45
 Asn Ser Ser Arg Gly Ile Ile Tyr Val Asp Lys Thr Glu Asn Phe Ala
 50 55 60
 Ala Ala Ala Arg Ala Ala Lys Glu Val Gln Glu Gln Met Ala Glu
 65 70 75 80
 Gln Leu Lys Ala Ile Leu
 85

<210> 9458
 <211> 230
 <212> PRT
 <213> B.fragilis

<400> 9458
 Ile Glu Ile Asn Lys Lys Arg Arg Met Phe Ser Lys His Pro Pro Phe
 1 5 10 15
 Leu Trp Asn Lys Pro Ser His Leu Ile Cys Asn Leu Ser Val Phe Tyr
 20 25 30
 Tyr Phe Tyr Ala Ile Asn Lys Thr Val Thr Thr Met Ile Tyr Arg Phe
 35 40 45
 Thr Ile Ile Ser Asp Glu Val Asp Asp Phe Val Arg Glu Ile Gln Ile
 50 55 60
 Asp Pro Glu Ala Thr Phe Phe Asp Leu His Glu Ala Ile Leu Lys Ala
 65 70 75 80
 Ala Asn Tyr Thr Asn Asp Gln Met Thr Ser Phe Phe Ile Cys Asp Asp
 85 90 95
 Asp Trp Glu Lys Glu Lys Glu Ile Thr Leu Glu Glu Met Asp Asn Asn
 100 105 110
 Pro Glu Met Asp Ser Trp Ile Met Lys Glu Thr Arg Leu Asn Glu Leu
 115 120 125
 Ile Glu Asp Glu Lys Gln Lys Leu Leu Tyr Val Phe Asp Tyr Met Thr
 130 135 140
 Glu Arg Cys Phe Phe Ile Glu Leu Ser Glu Ile Ile Thr Gly Lys Glu
 145 150 155 160
 Ile Lys Gly Ala Lys Cys Thr Lys Lys Ser Gly Glu Ala Pro Lys Gln
 165 170 175
 Thr Val Asp Phe Glu Glu Met Ala Ala Gly Gly Gly Ser Leu Asp Leu
 180 185 190
 Asp Glu Asn Phe Tyr Gly Asp Gln Asp Phe Asp Met Glu Asp Phe Asp
 195 200 205
 Ala Glu Gly Phe Asp Val Asn Asp Gly Ala Ala Gly Gly Gly Ser Ser
 210 215 220

Tyr Asp Glu Asp Lys Phe
225 230

<210> 9459
<211> 370
<212> PRT
<213> B.fragilis

<400> 9459

Met	Ala	Asp	Asn	Asn	Ser	Ile	Leu	Glu	Lys	Leu	Asp	Gly	Leu	Val	Ala
1			5						10					15	
Arg	Phe	Glu	Glu	Val	Ser	Thr	Leu	Ile	Thr	Asp	Pro	Ala	Val	Ile	Ala
			20					25					30		
Asp	Gln	Lys	Arg	Tyr	Val	Lys	Leu	Thr	Lys	Glu	Tyr	Lys	Glu	Leu	Asp
		35					40					45			
Asp	Leu	Met	Lys	Ala	Arg	Lys	Glu	Tyr	Met	Gln	Leu	Leu	Ala	Asn	Ile
	50					55				60					
Glu	Glu	Ala	Lys	Asp	Ile	Leu	Ser	Asn	Glu	Ser	Asp	Ala	Asp	Met	Arg
65					70				75					80	
Glu	Met	Ala	Lys	Glu	Glu	Met	Asp	Asn	Ser	Gln	Glu	Arg	Leu	Pro	Val
			85					90						95	
Leu	Glu	Glu	Glu	Ile	Lys	Leu	Leu	Leu	Val	Pro	Ala	Asp	Pro	Gln	Asp
			100					105					110		
Gly	Lys	Asn	Ala	Ile	Leu	Glu	Ile	Arg	Gly	Gly	Thr	Gly	Gly	Asp	Glu
		115					120					125			
Ala	Ala	Ile	Phe	Ala	Gly	Asp	Leu	Phe	Arg	Met	Tyr	Ala	Lys	Phe	Cys
		130				135					140				
Glu	Thr	Lys	Gly	Trp	Lys	Met	Glu	Val	Ser	Ser	Ala	Asn	Glu	Gly	Ala
145					150					155				160	
Ala	Gly	Gly	Tyr	Lys	Glu	Ile	Ile	Cys	Ser	Val	Thr	Gly	Asp	Asn	Val
				165				170						175	
Tyr	Gly	Thr	Leu	Lys	Tyr	Glu	Ser	Gly	Val	His	Arg	Val	Gln	Arg	Val
			180					185					190		
Pro	Ala	Thr	Glu	Thr	Gln	Gly	Arg	Val	His	Thr	Ser	Ala	Ala	Ser	Val
		195				200						205			
Ala	Val	Leu	Pro	Glu	Ala	Glu	Glu	Phe	Asp	Val	Val	Ile	Asn	Glu	Gly
		210				215					220				
Glu	Ile	Lys	Trp	Asp	Thr	Phe	Arg	Ser	Gly	Gly	Ala	Gly	Gly	Gln	Asn
225					230					235				240	
Val	Asn	Lys	Val	Glu	Ser	Gly	Val	Arg	Leu	Arg	Tyr	Ile	Trp	Lys	Asn
			245					250						255	
Pro	Asn	Thr	Gly	Val	Ala	Glu	Glu	Ile	Leu	Ile	Glu	Cys	Thr	Glu	Thr
		260					265						270		
Arg	Asp	Gln	Pro	Lys	Asn	Lys	Glu	Arg	Ala	Leu	Ala	Arg	Leu	Arg	Thr
		275					280					285			
Phe	Ile	Tyr	Asp	Lys	Glu	His	Gln	Lys	Tyr	Ile	Asp	Asp	Ile	Ala	Ser
		290				295					300				
Lys	Arg	Lys	Thr	Met	Val	Ser	Thr	Gly	Asp	Arg	Ser	Ala	Lys	Ile	Arg
305					310					315				320	
Thr	Tyr	Asn	Tyr	Pro	Gln	Gly	Arg	Ile	Thr	Asp	His	Arg	Ile	Asn	Tyr
			325					330						335	
Thr	Ile	Tyr	Asn	Leu	Ala	Ala	Phe	Met	Asp	Gly	Asp	Ile	Gln	Glu	Cys
			340				345						350		
Ile	Asp	Lys	Leu	Thr	Val	Ala	Glu	Asn	Ala	Glu	Arg	Leu	Lys	Glu	Ser
		355				360						365			
Glu	Leu														
	370														

<210> 9460

[illegible]

Thr	Asn	Leu	Lys	Ile	Lys	Thr	Met	Lys	Asp	Leu	Leu	Ser	Ile	Val	Ser
1				5					10					15	
Lys	Phe	Lys	Val	Gln	Gly	Thr	Val	Gly	Glu	Ile	Lys	Pro	Leu	Gly	Ala
			20					25				30			
Gly	Leu	Ile	Asn	Asp	Thr	Tyr	Lys	Val	Asn	Thr	Thr	Glu	Ala	Asp	Ala
			35				40					45			
Pro	Asp	Tyr	Val	Leu	Gln	Arg	Ile	Asn	His	Ala	Ile	Phe	Gln	Asn	Val
			50			55					60				
Glu	Met	Leu	Gln	Asp	Asn	Ile	Ala	Ala	Val	Thr	Gly	His	Ile	Arg	Lys
65				70						75					80
Lys	Leu	Thr	Glu	Ala	Gly	Glu	Thr	Asp	Val	Asp	Arg	Lys	Val	Leu	Thr
				85					90					95	
Phe	Leu	Pro	Thr	Glu	Glu	Gly	Lys	Thr	Tyr	Trp	Phe	Asp	Gly	Asp	Ser
			100					105					110		
Tyr	Trp	Arg	Val	Met	Val	Phe	Ile	Pro	Arg	Ala	Lys	Thr	Tyr	Glu	Thr
			115				120					125			
Val	Asn	Pro	Glu	Tyr	Ser	Tyr	Tyr	Ala	Gly	Ala	Ala	Phe	Gly	Asn	Phe
			130			135					140				
Gln	Ala	Met	Leu	Ala	Asp	Ile	Pro	Ala	Thr	Leu	Gly	Glu	Thr	Ile	Pro
145				150						155					160
Asp	Phe	His	Asn	Met	Glu	Phe	Arg	Leu	Lys	Gln	Leu	Arg	Glu	Ala	Val
				165					170					175	
Ala	Ala	Asn	Ala	Ala	Gly	Arg	Val	Ala	Glu	Val	Gln	Tyr	Tyr	Leu	Asp
			180					185					190		
Glu	Ile	Glu	Lys	Arg	Ala	Asp	Glu	Met	Cys	Lys	Ala	Glu	Arg	Leu	Tyr
			195				200					205			
Arg	Glu	Gly	Lys	Leu	Pro	Lys	Arg	Val	Cys	His	Cys	Asp	Thr	Lys	Val
						215					220				
Asn	Asn	Met	Met	Phe	Asp	Glu	Asp	Gly	Lys	Val	Leu	Cys	Val	Ile	Asp

225 230 235 240
 Leu Asp Thr Val Met Pro Ser Phe Ile Phe Ser Asp Tyr Gly Asp Phe
 245 250 255
 Leu Arg Thr Gly Ala Asn Thr Gly Asp Glu Asp Asp Lys Asn Leu Asp
 260 265 270
 Asn Val Asn Phe Asn Met Glu Ile Phe Lys Ala Phe Thr Lys Gly Tyr
 275 280 285
 Leu Glu Gly Ala Gly Ser Phe Leu Thr Pro Ile Glu Ile Glu Asn Leu
 290 295 300
 Pro Tyr Ala Ala Ala Leu Phe Pro Tyr Met Gln Cys Val Arg Phe Leu
 305 310 315 320
 Ala Asp Tyr Ile Asn Gly Asp Thr Tyr Tyr Lys Ile Lys Tyr Pro Glu
 325 330 335
 His Asn Leu Val Arg Thr Lys Ala Gln Phe Lys Leu Leu Gln Ser Val
 340 345 350
 Glu Glu His Thr Pro Glu Met Glu Ala Tyr Ile Lys Glu Cys Leu Gly
 355 360 365

<210> 9462
 <211> 72
 <212> PRT
 <213> B.fragilis

<400> 9462
 Pro Gly Ser Asn Gly Met Lys Arg Ser Asp Gly Ser Ile Leu Asn Lys
 1 5 10 15
 Arg Lys Lys Tyr Tyr Arg Ile Phe Arg Ser Gln Leu Asn Lys Gln Val
 20 25 30
 Tyr Ile Glu Asp Lys Phe Leu Thr Lys Lys Arg Lys Lys Pro Asp Lys
 35 40 45
 Ile Lys Arg Val Thr Lys Gly Ala Leu Leu His Asn Ile Phe Ser Ile
 50 55 60
 Phe Val Asp Asn Lys Asn Ile Pro
 65 70

<210> 9463
 <211> 548
 <212> PRT
 <213> B.fragilis

<400> 9463
 Gln Thr Gln Lys Lys Arg Thr Met Thr Gln Glu Met Met Ile Met Ala
 1 5 10 15
 Ala Ile Leu Val Ala Val Ile Leu Ile Thr Phe Ile Gly Ile Leu Ser
 20 25 30
 Arg Tyr Arg Lys Cys Lys Ser Asp Glu Val Leu Val Val Tyr Gly Lys
 35 40 45
 Thr Gly Gly Asp Lys Lys Ser Ala Lys Leu Tyr His Gly Gly Ala Ala
 50 55 60
 Phe Val Trp Pro Ile Val Gln Gly Tyr Glu Phe Leu Ser Met Lys Pro
 65 70 75 80
 Met Gln Ile Asp Cys Lys Leu Thr Gly Ala Leu Ser Ala Gln Asn Ile
 85 90 95
 Arg Val Asp Val Pro Thr Thr Ile Thr Val Ala Ile Ser Thr Asp Pro
 100 105 110
 Glu Val Met Gln Asn Ala Ala Glu Arg Met Leu Gly Leu Thr Met Asp
 115 120 125
 Asp Lys Gln Asn Leu Ile Thr Asp Val Val Tyr Gly Gln Met Arg Leu
 130 135 140

117 399 568 278 640 742 907

Val Ile Ala Asp Met Thr Ile Glu Glu Leu Asn Ser Asp Arg Asp Lys
 145 150 155 160
 Phe Leu Ser Lys Val Lys Asp Asn Ile Asp Thr Glu Leu Arg Lys Phe
 165 170 175
 Gly Leu Tyr Leu Met Asn Ile Asn Ile Ser Asp Ile Arg Asp Ala Ala
 180 185 190
 Asn Tyr Ile Val Asn Leu Gly Lys Glu Ala Glu Ser Lys Ala Gln Asn
 195 200 205
 Glu Ala Gln Ala Asn Ile Glu Glu Gln Glu Lys Leu Gly Ala Ile Lys
 210 215 220
 Ile Ala Asn Gln Ile Lys Glu Arg Glu Thr Lys Val Ala Glu Thr Arg
 225 230 235 240
 Lys Asp Gln Asp Ile Ala Ile Ala Glu Thr Lys Lys Leu Gln Glu Ile
 245 250 255
 Ser Val Ala Asn Ala Asp Lys Asp Arg Ile Ser Gln Val Ala Ile Ala
 260 265 270
 Asn Ala Glu Lys Glu Ser Gln Val Ala Lys Ala Glu Ala Glu Lys Asn
 275 280 285
 Ile Arg Ile Glu Gln Ala Asn Thr Glu Lys Glu Ser Arg Ile Ala Glu
 290 295 300
 Leu Asn Ser Asp Met Glu Ile Lys Gln Ala Glu Ala Gln Lys Lys Ala
 305 310 315 320
 Ala Ile Gly Arg Asn Glu Ala Gln Lys Glu Ile Ala Leu Ser Asn Ser
 325 330 335
 Glu Leu Ala Val Thr Gln Ala Asn Ala Asp Lys Gln Ala Gly Glu Ala
 340 345 350
 Ser Ala Lys Ser Glu Ala Ala Val Gln Thr Ala Lys Glu Ile Ala Gln
 355 360 365
 Lys Glu Val Glu Glu Ala Lys Ala Arg Lys Val Glu Ser Ser Leu Lys
 370 375 380
 Ala Glu Lys Ile Val Pro Ala Glu Val Ala Arg Gln Glu Ala Ile Leu
 385 390 395 400
 Gln Ala Glu Ala Val Ala Glu Lys Ile Thr Arg Glu Ala Glu Ala Arg
 405 410 415
 Ala Lys Ala Thr Leu Ala Gln Ala Glu Ala Glu Ala Lys Ala Ile Gln
 420 425 430
 Leu Lys Leu Glu Ala Glu Ala Glu Gly Lys Lys Arg Ser Leu Leu Ala
 435 440 445
 Glu Ala Glu Gly Phe Glu Ala Met Val Lys Ala Ala Glu Ser Asn Pro
 450 455 460
 Ala Ile Ala Ile Gln Tyr Lys Met Val Asp Gln Trp Lys Glu Ile Ala
 465 470 475 480
 Gly Glu Gln Val Lys Ala Phe Glu His Ile Asn Leu Gly Asn Ile Thr
 485 490 495
 Val Phe Asp Gly Gly Asn Gly Gly Thr Ser Asn Phe Leu Asn Thr Leu
 500 505 510
 Val Lys Thr Val Ala Pro Ser Leu Gly Val Leu Asp Lys Leu Pro Ile
 515 520 525
 Gly Glu Thr Val Lys Asn Met Ile His Pro Glu Glu Lys Lys Glu Glu
 530 535 540
 Thr Glu Lys Lys
 545

<210> 9464

<211> 1180

<212> PRT

<213> B.fragilis

<400> 9464

Thr Ser Lys Asn Ile Thr Lys Gln Ile Val His Lys Thr Asn Cys Leu
 1 5 10 15
 Gln Lys Leu Arg Tyr Arg Ser Asn Asp Thr Phe Val His Ile Phe Ile
 20 25 30
 Arg Pro His Glu Asn Pro Gly Ile Ile Met Tyr Phe Cys Cys Met Glu
 35 40 45
 Asn Glu Val Asn Glu Ser Phe Glu Ile Leu Leu Ala Ala Cys Arg Thr
 50 55 60
 Ala Asp Ser Asn Leu Ala Val Ala Tyr Lys Gln Leu Arg Asp Leu Leu
 65 70 75 80
 Glu Arg Leu Cys Arg Ala Gln Met Gln Asp Glu Ser Leu Gln Met Thr
 85 90 95
 Asp Leu Ser Ala Arg Ile Ser Phe Val Ser Ala Arg Ala Gly Leu Thr
 100 105 110
 Ile Val Glu Gln Asn Arg Leu His Thr Phe Arg Leu Thr Ser Asn Ala
 115 120 125
 Ile Leu Asn Arg Lys Glu Glu Pro Val Arg Glu Lys Leu Leu Arg Asp
 130 135 140
 Ala Lys Thr Leu Ala Phe Phe Ile Arg Lys Leu Tyr Glu Val Glu Ile
 145 150 155 160
 Pro Gly Glu Leu Tyr His Leu Leu Pro Arg Ala Asp Ala Thr Tyr Leu
 165 170 175
 Val Ala Pro Pro Ala Lys Lys Arg Ile Glu Arg Met Arg Val Cys Tyr
 180 185 190
 Gln Tyr Ala Asp Glu Gln Tyr Leu Tyr Val Thr Pro Val Asp Thr Ile
 195 200 205
 Ala Asp Glu Tyr Leu Arg Ile Arg Tyr Asn Val Pro Gln Ile Asn Glu
 210 215 220
 Glu Phe Ala Gln Thr Cys Glu Ile Leu Trp Cys His Ala Gln Leu Asn
 225 230 235 240
 Leu Leu Asp Val Ala Ile Asp Lys Thr Gly Val Leu Thr Pro Ser Phe
 245 250 255
 Ile Val Leu Glu Pro Asp Tyr Leu Ile Asp Ile Ser Ser Leu Ala Glu
 260 265 270
 Cys Phe Arg Asp Tyr Gly His His Pro Ala Asn Tyr Val Leu Ala Arg
 275 280 285
 Leu Gln Pro Ile Asp Asn Ala Arg Pro Leu Leu Leu Gly Asn Ile Ala
 290 295 300
 Asn Leu Phe Leu Asp Glu Trp Ile His Ala Glu Asn Ala Pro Asp Tyr
 305 310 315 320
 Arg Glu Cys Met Gln Lys Ala Phe Arg Arg Tyr Pro Ile Glu Leu Ala
 325 330 335
 Ala Cys Thr Asp Leu Arg Asp Arg Glu Lys Glu Arg Gln Phe Phe Asp
 340 345 350
 Asp Cys Lys Leu His Phe Glu His Ile Arg Glu Val Val Thr Asp Thr
 355 360 365
 Phe Arg Ala Pro Gly Tyr Glu Leu Asp Lys Thr Asp Ala Val Leu Glu
 370 375 380
 Pro Ser Tyr Ile Cys Glu Ala Leu Gly Leu Gln Gly Arg Leu Asp Tyr
 385 390 395 400
 Met Gln Arg Asp Met Ser Ser Phe Ile Glu Met Lys Ser Gly Lys Ala
 405 410 415
 Asp Glu Phe Ser Ile Arg Asn Lys Val Glu Pro Lys Glu Asn Asn Lys
 420 425 430
 Val Gln Met Leu Leu Tyr Gln Ala Val Leu Gln Tyr Ser Met Gly Met
 435 440 445
 Asp His His Arg Val Lys Ala Tyr Leu Leu Tyr Thr Arg Tyr Pro Leu
 450 455 460
 Leu Tyr Pro Ala Arg Pro Ser Trp Ala Met Val Arg Arg Ile Ile Asn

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

465 470 475 480
 Leu Arg Asn Arg Ile Val Ser Asp Glu Tyr Gly Ile Gln Leu Arg Asn
 485 490 495
 Ser Val Glu Tyr Thr Ala Ser Lys Leu Gln Ala Ile Arg Ser Asp Ile
 500 505 510
 Leu Asn Glu Arg Gly Leu Ser Gly Arg Phe Trp Glu Gln Tyr Leu Arg
 515 520 525
 Pro Ser Ile Asp Asn Leu Ser Gln Lys Leu Ala Ser Leu Thr Pro Leu
 530 535 540
 Glu Gln Ser Tyr Phe Tyr Ala Leu Tyr Asn Phe Ile Thr Lys Glu Leu
 545 550 555 560
 Tyr Thr Ser Lys Ser Gly Asp Val Asp Tyr Glu Gly Arg Thr Gly Ser
 565 570 575
 Ala Ala Leu Trp Leu Ser Thr Leu Thr Glu Lys Cys Glu Ala Gly Glu
 580 585 590
 Ile Leu Tyr Asp Leu Arg Ile Lys Glu Asn His Ala Ala Asp Glu His
 595 600 605
 Lys Ala Tyr Ile Leu Leu Glu Gln Arg Lys Glu Gly Tyr Gly Glu Asn
 610 615 620
 Lys Leu Ser Pro Glu Pro Asn Glu Ile Ser Ser Glu Val Glu Lys Gly
 625 630 635 640
 Ala Gln Ala Leu Pro Asn Phe Arg Gln Gly Asp Ala Ile Val Leu Tyr
 645 650 655
 Glu Arg Asn Arg Asn Glu Asp Asn Val Thr Asn Lys Met Val Phe Lys
 660 665 670
 Gly Asn Ile Glu Phe Ile Thr Glu Glu Glu Ile Gly Ile Arg Leu Arg
 675 680 685
 Ala Thr Gln Gln Asn Ser Ser Val Leu Pro Pro Asp Ser Leu Tyr Ala
 690 695 700
 Ile Glu His Asp Thr Met Asp Thr Thr Phe Arg Ser Met Tyr Gln Ala
 705 710 715 720
 Leu Ser Ala Phe Ala Ser Ala Thr Lys Glu Arg Arg Asp Leu Leu Leu
 725 730 735
 Ala Gln Arg Met Pro Glu Phe Glu Tyr Gly Leu Asp Lys Gln Ile Leu
 740 745 750
 Thr Ala Pro Asp Asp Phe Thr Arg Val Thr Leu Lys Ala Leu Ala Ala
 755 760 765
 Lys Asp Phe Phe Leu Leu Val Gly Pro Pro Gly Thr Gly Lys Thr Ser
 770 775 780
 Cys Ala Leu Lys Lys Met Val Glu Thr Phe His Cys Glu Ala Gln Thr
 785 790 795 800
 Gln Ile Leu Leu Leu Ser Tyr Thr Asn Arg Ala Val Asp Glu Ile Cys
 805 810 815
 Lys Ala Ile Ser Ser Ile Arg Pro Glu Val Asp Phe Ile Arg Val Gly
 820 825 830
 Ser Glu Leu Ser Cys Asp Glu Ala Tyr Arg His His Leu Ile Glu Asn
 835 840 845
 Glu Leu Ser Leu Cys Thr Arg Arg Ser Glu Val Ala Glu Arg Ile Ala
 850 855 860
 Arg Cys Arg Ile Phe Val Gly Thr Val Ala Ser Ile Ser Gly Lys Pro
 865 870 875 880
 Glu Leu Phe Arg Leu Lys Arg Phe Asp Val Ala Ile Ile Asp Glu Ala
 885 890 895
 Thr Gln Ile Leu Glu Pro Gln Leu Leu Gly Ile Leu Cys Ala Arg Ser
 900 905 910
 Glu Asn Gly Glu Asn Ala Val Gly Lys Phe Ile Leu Ile Gly Asp His
 915 920 925
 Lys Gln Leu Pro Ala Val Val Leu Gln Asn Thr Glu Gln Ser Glu Ile
 930 935 940

Tyr Asp Glu Gly Leu Arg Ser Ala Gly Leu Lys Asn Leu Lys Asp Ser
 945 950 955 960
 Leu Phe Glu Arg Leu Tyr Arg Thr Leu Gln Thr Ser Ser Glu Asp Leu
 965 970 975
 Phe Pro Asp Ser Ala Ser Val Ser Ala Pro Asn His Arg Ser Phe Asp
 980 985 990
 Met Leu Cys Lys Gln Gly Arg Met His Pro Glu Val Ala His Phe Ala
 995 1000 1005
 Asn Gln Ala Phe Tyr Glu Gly Arg Leu Leu Pro Val Gly Leu Pro His
 1010 1015 1020
 Gln Met Glu Asp Asn Gln Asp Val Gln Arg Met Val Phe Leu Pro Ser
 1025 1030 1035 1040
 Glu Pro Glu Pro Gln Gly Thr Ser Ala Lys Val Asn His Ser Glu Ala
 1045 1050 1055
 Arg Ile Val Ala Arg Ile Ala Ala Asp Val Tyr Gln Gln Tyr Gly Gly
 1060 1065 1070
 Thr Phe Asp Gly Met Arg Thr Leu Gly Ile Ile Thr Pro Tyr Arg Ser
 1075 1080 1085
 Gln Ile Ala Leu Ile Arg Lys Glu Ile Val Lys Met Gly Ile Pro Glu
 1090 1095 1100
 Leu Asn Ser Ile Leu Val Asp Thr Val Glu Arg Phe Gln Gly Ser Glu
 1105 1110 1115 1120
 Arg Asp Val Ile Ile Tyr Ser Phe Cys Val Asn Tyr Pro Tyr Gln Leu
 1125 1130 1135
 Arg Phe Leu Ser Asn Leu Thr Glu Glu Asn Gly Val Phe Ile Asp Arg
 1140 1145 1150
 Lys Leu Asn Val Ala Leu Thr Arg Ala Arg Lys Gln Ser Leu His His
 1155 1160 1165
 Arg Gly Ser Pro Ile Ile Gly Thr Lys Pro Asp Leu
 1170 1175 1180

<210> 9465

<211> 462

<212> PRT

<213> B.fragilis

<400> 9465

Pro Met Leu Lys Gln Lys Thr Leu Lys Glu Ser Phe Ser Leu Arg Gly
 1 5 10 15
 Lys Gly Leu His Thr Gly Leu Asp Leu Thr Val Thr Phe Asn Pro Ala
 20 25 30
 Pro Asp Asn His Gly Tyr Lys Ile Gln Arg Thr Asp Leu Glu Gly Gln
 35 40 45
 Pro Ile Ile Asp Ala Val Ala Asp Asn Val Gly Glu Thr Thr Arg Gly
 50 55 60
 Thr Val Leu Ser Lys Asn Gly Val Lys Val Ser Thr Gly Glu His Gly
 65 70 75 80
 Met Ala Ala Leu Tyr Ala Leu Gly Ile Asp Asn Cys Leu Ile Gln Val
 85 90 95
 Asn Gly Pro Glu Phe Pro Ile Leu Asp Gly Ser Ala Gln Tyr Tyr Val
 100 105 110
 Gln Glu Ile Glu Lys Val Gly Ile Glu Glu Gln Asn Ala Val Lys Asp
 115 120 125
 Phe Tyr Ile Ile Lys Ser Lys Ile Glu Phe Arg Asp Glu Glu Thr Gly
 130 135 140
 Ser Ser Ile Ile Val Leu Pro Asp Glu Asn Phe Ser Leu Asn Val Leu
 145 150 155 160
 Val Ser Tyr Asp Ser Thr Ile Ile Pro Asn Gln Phe Ala Thr Leu Glu
 165 170 175

Asp Met Lys Lys Phe Lys Asp Glu Ile Ala Pro Ser Arg Thr Phe Val
 180 185 190
 Phe Val Arg Glu Ile Glu Pro Leu Leu Ser Ala Gly Leu Ile Lys Gly
 195 200 205
 Gly Asp Leu Asp Asn Ala Ile Val Ile Tyr Glu Arg Glu Met Ser Gln
 210 215 220
 Glu Asn Tyr Asp Lys Leu Ala Asp Val Met Arg Val Pro His Met Asp
 225 230 235 240
 Ala Lys Leu Leu Gly Tyr Ile Asn His Lys Pro Leu Val Trp Pro Asn
 245 250 255
 Glu Cys Ala Arg His Lys Leu Leu Asp Val Ile Gly Asp Leu Ala Leu
 260 265 270
 Ile Gly Lys Pro Ile Lys Gly Arg Ile Ile Ala Thr Arg Pro Gly His
 275 280 285
 Thr Ile Asn Asn Lys Phe Ala Arg Gln Met Arg Lys Glu Ile Arg Leu
 290 295 300
 His Glu Ile Gln Ala Pro Thr Tyr Asp Cys Asn Arg Ala Pro Ile Met
 305 310 315 320
 Asp Val Asn Arg Ile Arg Glu Leu Leu Pro His Arg Tyr Pro Phe Gln
 325 330 335
 Leu Val Asp Lys Val Ile Glu Ile Gly Ala Asn Tyr Ile Val Gly Val
 340 345 350
 Lys Asn Val Thr Ser Asn Glu Pro Phe Phe Gln Gly His Phe Pro Gln
 355 360 365
 Glu Pro Val Met Pro Gly Val Leu Gln Ile Glu Ala Met Ala Gln Ile
 370 375 380
 Gly Gly Leu Leu Val Leu Asn Ser Val Asp Glu Pro Glu Arg Tyr Ser
 385 390 395 400
 Thr Tyr Phe Met Lys Ile Asp Gly Val Lys Phe Arg Gln Lys Val Val
 405 410 415
 Pro Gly Asp Thr Leu Ile Phe Arg Val Glu Leu Leu Ala Pro Ile Arg
 420 425 430
 Arg Gly Ile Ser Thr Met Lys Gly Tyr Ala Phe Val Gly Glu Lys Val
 435 440 445
 Val Cys Glu Cys Glu Phe Met Ala Gln Ile Val Lys Asn Lys
 450 455 460

<210> 9466

<211> 417

<212> PRT

<213> B.fragilis

<400> 9466

Ile Leu Met Asn Ile Arg Leu Thr Ser Leu Phe Val Ser Leu Phe Leu
 1 5 10 15
 Ser Val Pro Val Trp Ala Gly Gly His Lys Asn Leu Pro Ala Lys Gly
 20 25 30
 Asp Leu His Ile Pro Val Phe Glu Asn Val Asn Val Arg Phe Ser Pro
 35 40 45
 Asp Thr Tyr Pro Asp Asn Tyr Asn Glu Ala Asp Gly Thr Gly Val Tyr
 50 55 60
 His Leu Val Asn Gly Arg Ile Ile Leu Lys Lys Ile Thr Leu Pro Glu
 65 70 75 80
 Tyr Lys Arg Asn Val Ser Val Ser Leu Lys Val Thr Leu Ala Ser Asn
 85 90 95
 Gly Asp Arg Trp Asp Lys Ser Gly Ser Cys Phe Val Leu Pro Lys Ser
 100 105 110
 Ser Ala Ile Asn Leu Leu Thr Ile Ala Arg Asp Gly Met Lys Phe Pro
 115 120 125

Ser Val Asp Ser Leu Lys Leu Glu Lys Met Val Gly Ile Val Pro Gly
 130 135 140
 Lys Asp Tyr Leu Pro Thr Val Glu Leu Met Arg Phe Met Thr Pro Phe
 145 150 155 160
 Gly Val Gly His Tyr Ser Asn Asn Asn Asp Ser Leu Ser Ser Lys Arg
 165 170 175
 Arg Pro Val Tyr Ile Pro Lys Trp Glu Ser Asn Val Thr Trp Gln Gln
 180 185 190
 Asp Ile Thr Asp Leu Tyr Pro Leu Glu Gly Glu Ala Tyr Val Gly
 195 200 205
 Ile Tyr Ile Asp Thr Trp Thr Ser Glu Gly Tyr Leu Val Asn Ala Asp
 210 215 220
 Ile Asp Val Lys Glu Ser Arg Leu Ala Cys Asp Val Leu Pro Lys Arg
 225 230 235 240
 His Val Glu Pro Leu Met Asn Thr Val Tyr Tyr Met Gly Gln Ser Tyr
 245 250 255
 Pro Asp Ile Phe Ala Arg Arg Asp Val Ser Thr Asp Phe Thr Val Pro
 260 265 270
 Lys Gly Ala Lys Asn Ile Arg Leu Lys Tyr Ile Val Thr Gly His Gly
 275 280 285
 Gly His Ser Gly Gly Asp Glu Phe Val Gln Lys Arg Asn Ile Ile Ser
 290 295 300
 Val Asp Gly Lys Glu Val Leu Asn Phe Ile Pro Trp Arg Asp Asp Cys
 305 310 315 320
 Ala Ser Phe Arg Arg Phe Asn Pro Ala Thr Gly Val Trp Leu Ile Lys
 325 330 335
 Arg Leu Ala Ser Tyr Ile Gly Glu Lys Gly Tyr Thr Glu Lys Glu Val
 340 345 350
 Glu Glu Pro Leu Ala Ser Ser Asp Leu Ser Arg Ser Asn Trp Cys Pro
 355 360 365
 Gly Ser Asp Val Val Pro Glu Glu Ala Val Ile Gly Thr Leu Ala Pro
 370 375 380
 Gly Lys His Thr Phe Thr Val Ser Ile Pro Glu Ala Gln Ala Val Asp
 385 390 395 400
 Gly Asn Lys Leu Asn His Trp Leu Val Ser Ala Tyr Leu Val Trp Glu
 405 410 415
 Glu

<210> 9467

<211> 248

<212> PRT

<213> B.fragilis

<400> 9467

Val Lys Met Asn Lys Gln Ser Leu Phe Glu Asn Ile Lys Arg Lys Lys
 1 5 10 15
 Ser Phe Leu Cys Val Gly Leu Asp Thr Asp Ile Lys Lys Ile Pro Asp
 20 25 30
 His Leu Leu Asp Asp Pro Asp Pro Ile Phe Ala Phe Asn Lys Ala Ile
 35 40 45
 Val Asp Ala Thr Ala Asp Tyr Cys Ile Ala Tyr Lys Pro Asn Leu Ala
 50 55 60
 Phe Tyr Glu Ser Met Gly Val Lys Gly Trp Ile Ala Phe Glu Lys Thr
 65 70 75 80
 Val Asn Tyr Ile Lys Glu Asn Tyr Pro Asp Gln Phe Ile Ile Ala Asp
 85 90 95
 Ala Lys Arg Gly Asp Ile Gly Asn Thr Ser Ala Met Tyr Ala Arg Thr
 100 105 110

Phe Phe Glu Glu Leu Asp Ile Asp Ser Val Thr Val Ala Pro Tyr Met
 115 120 125
 Gly Glu Asp Ser Val Thr Pro Phe Leu Ser Tyr Glu Gly Lys Trp Val
 130 135 140
 Ile Leu Leu Ala Leu Thr Ser Asn Lys Gly Ser His Asp Phe Gln Leu
 145 150 155 160
 Thr Glu Asp Ala Asn Gly Glu Arg Leu Phe Glu Lys Val Leu Lys Lys
 165 170 175
 Ser Gln Glu Trp Ala Asn Asp Glu Gln Met Met Tyr Val Val Gly Ala
 180 185 190
 Thr Gln Gly Arg Ala Phe Glu Asp Ile Arg Lys Ile Val Pro Asn His
 195 200 205
 Phe Leu Leu Val Pro Gly Ile Gly Ala Gln Gly Gly Ser Ser Arg Arg
 210 215 220
 Ser Met Gln Ile Trp Tyr Glu Gln His Leu Trp Thr Tyr Cys Glu Phe
 225 230 235 240
 Leu Ser Arg Asn Tyr Leu Cys Arg
 245

<210> 9468

<211> 251

<212> PRT

<213> B.fragilis

<400> 9468

Ile Lys Ser Asn Lys Arg Met Asn Tyr Pro Gln Glu Lys Ile Lys Pro
 1 5 10 15
 Tyr Ser Asn Asp Gly Lys Lys Ser Glu Gln Val Glu Gln Met Phe Asp
 20 25 30
 Asn Ile Ala Pro Ala Tyr Asp Gln Leu Asn His Thr Leu Ser Leu Gly
 35 40 45
 Ile Asp Arg Ser Trp Arg Arg Lys Ala Ile Asn Trp Leu Lys Pro Phe
 50 55 60
 Arg Pro Gln Gln Ile Met Asp Val Ala Thr Gly Thr Gly Asp Phe Ala
 65 70 75 80
 Ile Leu Ala Cys His Glu Leu Gln Pro Glu Gln Leu Ile Gly Thr Asp
 85 90 95
 Ile Ser Glu Gly Met Met Asn Val Gly Arg Glu Lys Val Lys Lys Glu
 100 105 110
 Gly Leu Ser Glu Lys Ile Ser Phe Ala Arg Glu Asp Cys Thr Ser Leu
 115 120 125
 Ser Phe Ala Asp Asn Arg Phe Asp Ala Ile Thr Val Ala Phe Gly Ile
 130 135 140
 Arg Asn Phe Glu Asp Leu Asp Lys Gly Leu Ser Glu Met Tyr Arg Val
 145 150 155 160
 Leu Lys Thr Gly Gly His Leu Val Ile Leu Glu Leu Thr Thr Pro Asp
 165 170 175
 Arg Phe Pro Met Lys Gln Met Phe Thr Ile Tyr Ser Lys Ile Val Ile
 180 185 190
 Pro Thr Leu Gly Lys Leu Leu Ser Lys Asp Asn Ser Ala Tyr Ser Tyr
 195 200 205
 Leu Pro Gln Thr Ile Lys Ala Phe Pro Gln Gly Glu Val Met Lys Asn
 210 215 220
 Val Ile Ser Arg Val Gly Phe Ser Gln Val Gln Phe Arg Arg Leu Thr
 225 230 235 240
 Phe Gly Ile Cys Thr Leu Tyr Thr Ala Thr Lys
 245 250

<210> 9469

<211> 395
 <212> PRT
 <213> B.fragilis

<400> 9469

Ser	His	Ala	Asn	Met	Ile	Leu	Val	Gln	Ile	Leu	Val	Lys	Asp	Leu	Phe
1				5					10					15	
Asn	Met	Ile	Lys	Lys	Ile	Phe	Phe	Ser	Ser	Phe	Leu	Leu	Ile	Ile	Met
			20					25					30		
Phe	Cys	Gly	Cys	Met	Thr	Gln	Asn	Glu	Ile	Thr	Gly	Ser	Val	Ala	Lys
		35					40					45			
Leu	Glu	Thr	Val	Glu	Lys	Val	Val	Asp	Asp	Thr	Leu	Phe	Leu	Lys	Asn
	50					55					60				
Pro	Gln	Val	Phe	Cys	Leu	Glu	Thr	Lys	Asp	Asn	Ala	Leu	Ile	Lys	Arg
65					70					75					80
Ile	Asn	Arg	Val	Ile	Glu	Trp	Lys	Asn	Thr	Tyr	Tyr	Ile	Leu	Asp	Lys
				85					90					95	
Ser	Met	Lys	Gln	Val	Leu	Ala	Phe	Asn	Asp	Lys	Gly	Arg	His	Leu	Phe
			100					105					110		
Thr	Ile	His	Arg	Val	Gly	Ile	Gly	Lys	Gly	Glu	Tyr	Gly	Ser	Ile	Leu
		115					120						125		
Asp	Ile	Ala	Ile	Asp	Arg	Gln	Asn	Glu	Asn	Leu	Val	Phe	Leu	Ala	Asp
	130					135					140				
Pro	Thr	Ser	Leu	Ile	Tyr	Tyr	Asp	Leu	Gln	Gly	Asn	Phe	Ile	Lys	Thr
145					150					155					160
Thr	Lys	Leu	Pro	Gly	Tyr	Tyr	His	Ser	Ile	Ala	Ile	Asp	Asn	Gly	Met
				165					170					175	
Ile	Tyr	Leu	Glu	Asn	Glu	Thr	Tyr	Ile	Asn	Asn	Gln	Leu	Ser	Thr	Ser
			180					185					190		
Ser	Ile	Thr	Val	Ile	Ala	Pro	Asp	Asn	Gln	Lys	Thr	Glu	Leu	Leu	Lys
		195					200					205			
Pro	Leu	Arg	Glu	Ile	Ala	Pro	Tyr	Cys	Phe	Ile	Gly	Gly	Ser	Arg	Leu
	210					215					220				
Asn	Gly	Thr	Thr	Pro	Ile	Val	Phe	Thr	Arg	Lys	Phe	Asp	Asn	Thr	Ile
225					230					235					240
Tyr	Gln	Leu	Glu	Asp	Gly	Lys	Ile	Thr	Pro	Tyr	Tyr	Ser	Phe	Asp	Phe
				245					250					255	
Met	Asn	Glu	Asn	Phe	Pro	Glu	Ala	Ala	Lys	Asp	Lys	Glu	Tyr	Thr	Cys
			260					265					270		
Arg	Glu	Leu	Asn	Lys	Phe	Thr	Trp	Asp	Arg	Tyr	Val	Tyr	Leu	Met	Ala
		275					280					285			
Asn	Val	Ala	Asn	Ala	Pro	Gln	Tyr	Leu	Met	Phe	Cys	Thr	Asn	Leu	Phe
	290					295					300				
Gly	Val	Tyr	Val	Phe	Asp	Lys	Met	Gln	Asn	Lys	Leu	Leu	Lys	Tyr	Asn
305					310					315					320
Lys	Ile	Arg	Asn	Thr	Gly	Tyr	Gln	Thr	Asp	Leu	His	Gln	Tyr	Ile	Pro
			325						330					335	
Val	Glu	Gly	Ala	Asn	Asn	Arg	Val	Phe	Phe	Thr	Val	Tyr	Pro	Thr	Thr
			340					345					350		
Leu	Phe	Ser	Leu	Lys	Ala	Ile	Val	Asp	Asn	His	Pro	Ser	Phe	Lys	Asp
		355					360					365			
Lys	Met	Ser	Asp	Lys	Leu	Tyr	Lys	Leu	Thr	Glu	Ser	Leu	Asp	Ser	Asp
	370					375					380				
Ser	Asn	Pro	Val	Ile	Phe	Ser	Tyr	Gln	Ile	Lys					
385					390					395					

<210> 9470
 <211> 76
 <212> PRT

<213> B.fragilis

<400> 9470

Arg His Lys Lys Gly Val Val Asn Lys Val Asn Arg Val Trp Val Val
 1 5 10 15
 Gly Asn Gly Ala Met Leu Pro Tyr Lys Val Tyr Asn Lys Asn Tyr Trp
 20 25 30
 Ser Glu Val Pro Gly Asn Leu Tyr Ile Asp Ile Pro Glu Arg Val Gln
 35 40 45
 Asp Glu Gln Ile Thr Val Ile Ala Val Leu Leu Asp Gly Pro Ile Lys
 50 55 60
 Leu Tyr Arg Gly Val Gly Gln Val Ile Glu Ser Asn
 65 70 75

<210> 9471

<211> 601

<212> PRT

<213> B.fragilis

<400> 9471

Thr Glu Ile Glu Lys Thr Met Lys Thr Ile Leu Leu Phe Ala Leu Ser
 1 5 10 15
 Leu Leu Leu Ser Leu Ser Val Ser Asp Val Cys Ala Gln Glu Arg Ile
 20 25 30
 Tyr Asp Ile Ser Gln Phe Gly Leu Lys Ala Asn Ser Lys Lys Asn Ala
 35 40 45
 Ser Pro Val Val Arg Lys Ala Ile Ala Lys Ile Lys Ala Glu Cys Arg
 50 55 60
 Asp Gly Glu Lys Val Ile Leu Arg Phe Pro Ala Gly Arg Tyr Asn Phe
 65 70 75 80
 His Glu Ala Gly Ser Thr Val Arg Glu Tyr Tyr Ile Ser Asn His Asp
 85 90 95
 Gln Asp Asn Pro Lys Lys Val Gly Ile Ala Leu Glu Asp Met Lys Asn
 100 105 110
 Leu Thr Ile Asp Gly Gln Gly Ser Glu Phe Val Phe Tyr Gly Arg Met
 115 120 125
 Ile Pro Val Ser Leu Leu Arg Ser Glu Asn Cys Val Leu Lys Asn Phe
 130 135 140
 Ser Ile Asp Phe Glu Gln Pro His Ile Ala Gln Val Gln Val Val Glu
 145 150 155 160
 Asn Asp Pro Glu Lys Gly Ile Thr Phe Glu Pro Ala Pro Trp Val Asp
 165 170 175
 Tyr Arg Ile Ser Lys Asp Ser Val Phe Glu Gly Leu Gly Glu Gly Trp
 180 185 190
 Val Met Arg Tyr Ser Trp Gly Ile Ala Phe Asp Gly Lys Thr Lys His
 195 200 205
 Val Val Tyr Asn Thr Ser Asp Ile Gly Cys Pro Thr Lys Gly Ala Phe
 210 215 220
 Glu Val Ala Pro Arg Arg Ile Cys Ser Pro Lys Trp Lys Asp Ala Arg
 225 230 235 240
 Leu Val Pro Gly Thr Val Val Ala Met Arg Gly Trp Gly Arg Pro Thr
 245 250 255
 Pro Gly Ile Phe Met Ser His Asp Val Asn Thr Ser Leu Leu Asp Val
 260 265 270
 Lys Val His Tyr Ala Glu Gly Met Gly Leu Leu Ala Gln Leu Cys Glu
 275 280 285
 Asp Ile Thr Leu Asp Gly Phe Gly Val Cys Leu Lys Gly Asp Asn Asp
 290 295 300
 Pro Arg Tyr Phe Thr Thr Gln Ala Asp Ala Thr His Phe Ser Gly Cys

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305 310 315 320
 Lys Gly Lys Ile Val Ser Lys Asn Gly Leu Tyr Glu Gly Met Met Asp
 325 330 335
 Asp Ala Ile Asn Val His Gly Thr Tyr Leu Lys Val Ile Lys Arg Val
 340 345 350
 Asp Asp His Thr Leu Ile Gly Arg Tyr Met His Asp Gln Ser Trp Gly
 355 360 365
 Phe Glu Trp Gly Arg Pro Gly Asp Asp Val Gln Phe Val Arg Ser Glu
 370 375 380
 Thr Met Glu Leu Ile Gly Lys Gln Asn Gln Ile Thr Ala Ile Arg Pro
 385 390 395 400
 Tyr Asp Lys Gly Glu Ile Gln Gly Ala Arg Glu Phe Ser Ile Thr Phe
 405 410 415
 Lys Glu Ala Ile Asp Pro Ala Ile Asn Glu Lys Ser Gly Phe Gly Ile
 420 425 430
 Glu Asn Leu Thr Trp Thr Pro Glu Val Leu Phe Ala Gly Asn Thr Ile
 435 440 445
 Arg Asn Asn Arg Ala Arg Gly Thr Leu Phe Ser Thr Pro Lys Lys Thr
 450 455 460
 Val Val Glu Asp Asn Leu Phe Asp His Thr Ser Gly Thr Ala Ile Leu
 465 470 475 480
 Leu Cys Gly Asp Cys Asn Gly Trp Phe Glu Thr Gly Ala Cys Arg Asp
 485 490 495
 Val Thr Ile Arg Arg Asn Arg Phe Ile Asn Ala Leu Thr Asn Met Phe
 500 505 510
 Gln Phe Thr Asn Ala Val Ile Ser Ile Tyr Pro Glu Ile Pro Asn Leu
 515 520 525
 Lys Asp Gln Gln Lys Tyr Phe His Gly Gly Lys Asp Gly Gly Ile Val
 530 535 540
 Ile Glu Asp Asn Glu Phe Asp Thr Phe Asp Ala Pro Ile Leu Tyr Ala
 545 550 555 560
 Lys Ser Val Asp Gly Leu Ile Phe Arg Asn Asn Val Ile Lys Thr Asn
 565 570 575
 Thr Glu Phe Lys Pro Phe His Trp Asn Lys Asp Arg Phe Leu Leu Glu
 580 585 590
 Arg Val Thr Asn Val Lys Ile Ser Glu
 595 600

<210> 9472

<211> 226

<212> PRT

<213> B.fragilis

<400> 9472

Glu Arg Lys Glu Thr Arg Leu Ser Asp Met Lys Lys Ser Thr Leu Thr
 1 5 10 15
 Leu Leu Leu Phe Ile Leu Gly Ile Ser Ser Ser Phe Ser Val Gly Ala
 20 25 30
 Gln Glu Ala Lys Thr Val Phe Val Asn Ile Pro Asp Ser Leu Cys Pro
 35 40 45
 Leu Leu Ser Ser Val Asn Arg Ala Asp Cys Ile Asp Phe Ile Glu Ser
 50 55 60
 Lys Met Lys Ala Gln Val Thr Asn Arg Phe Gly Gly Lys Ser Glu Met
 65 70 75 80
 Thr Glu Leu Ser Pro Asp Tyr Val Ser Leu Gln Met Ser Asp Ala Ser
 85 90 95
 Asn Trp Gln Met Lys Leu Leu Pro Leu Asn Asp Thr Thr Lys Val Val
 100 105 110
 Cys Ala Val Ser Thr Val Cys Ala Pro Ala Cys Asp Ser His Ile Arg

115	120	125
Phe Tyr Thr Thr Asp Trp Lys Glu Leu Pro Ala Thr Asp Phe Leu Pro		
130	135	140
Ser Val Pro Gln Met Asn Asp Phe Phe Thr Ser Ser Asp Ser Thr Asp		
145	150	155
Tyr Asp Phe Ile Asp Ala Arg Leu Gln Ala Asp Met Ala Leu Met Gln		
	165	170
Ala Glu Leu Ser Lys Glu Asn Gly Thr Leu Thr Phe Thr Leu Thr Thr		
	180	185
Pro Glu Tyr Met Glu Lys Glu Thr Ala Glu Lys Leu Lys Pro Phe Leu		
	195	200
Arg Arg Ser Ile Val Tyr Thr Trp Lys Asp Gly Lys Phe Ile Pro Asp		
	210	215
Thr Leu		220
225		

<210> 9473

<211> 703

<212> PRT

<213> B.fragilis

<400> 9473

Arg Thr Val Trp Thr Leu Lys Pro Tyr Leu Phe Arg Val Gly Gly Leu		
1	5	10
His Phe Asn His Tyr Val Phe Met Lys Arg Leu Leu Ser Val Phe Leu		
	20	25
Phe Leu Phe Cys Cys Val Ile Ala Ala Asp Ala Gln Asp Asp Ala Ala		
	35	40
Gln Tyr Asp Ser Ile Met Asn Leu Met Lys Asn Lys Lys Ile Pro Leu		
	50	55
Met Glu Arg Tyr Tyr Met Thr Gly Asp Ile Glu Tyr Leu Ser Arg Glu		
	65	70
His Gln Ile Ala Val Leu Lys Gln Leu Ile Pro Glu Ala Lys Glu Val		
	85	90
Glu Asp Lys Ala Val Ile Thr Arg Leu Tyr Ser Ile Val Ala Met Phe		
	100	105
Glu Asn Gln Leu Gly His Met Thr Glu Ala Lys Asn Tyr Leu Asp Ser		
	115	120
Ala Phe Met Asn Lys Gly Lys Phe Glu Asn Asn Asn Ile Ser Gly Met		
	130	135
Met His Tyr Ile Ala Gly Ile Tyr Tyr Ser Asp Lys Asn Leu Met Glu		
	145	150
Gln Ala His Glu Asn Tyr Tyr Gln Ala Ala Glu Tyr Phe Asn Arg Asn		
	165	170
Glu Met Lys Pro Ala Ile Leu Thr Glu Ile Tyr Tyr Asp Leu Ser Ile		
	180	185
Ile Tyr Ser Met Trp Gln Asp Asp Glu Gly Leu His Glu Leu Ser Glu		
	195	200
Ala Met Lys Asp Leu Pro Val Asp Phe Pro Phe Gln Gln Ile Leu Lys		
	210	215
Trp Thr Ile Lys Val Lys Tyr Phe Tyr Ala Leu Tyr Gln Asn Glu His		
	225	230
Arg Val Asp Leu Leu Asp Ser Val Thr Lys Tyr Asn Gln Glu Ala Phe		
	245	250
Lys Val Tyr Thr Ser Thr Glu Asn Pro Tyr Asp Val Gly Tyr Val Ile		
	260	265
Ser Asp Asn Tyr Leu His Gln Ala Ile Val Tyr Ser Glu Ala Gly Lys		
	275	280
Ile Lys Glu Ala Glu Gln Cys Phe Glu Thr Gly Lys Lys Leu Met Asn		
		285

118 119 120 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140 141 142 143 144 145 146 147 148 149 150 151 152 153 154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184 185 186 187 188 189 190 191 192 193 194 195 196 197 198 199 200 201 202 203 204 205 206 207 208 209 210 211 212 213 214 215 216 217 218 219 220 221 222 223 224 225 226 227 228 229 230 231 232 233 234 235 236 237 238 239 240 241 242 243 244 245 246 247 248 249 250 251 252 253 254 255 256 257 258 259 260 261 262 263 264 265 266 267 268 269 270 271 272 273 274 275 276 277 278 279 280 281 282 283 284 285 286 287 288 289 290 291 292 293 294 295 296 297 298 299 300 301 302 303 304 305 306 307 308 309 310 311 312 313 314 315 316 317 318 319 320 321 322 323 324 325 326 327 328 329 330 331 332 333 334 335 336 337 338 339 340 341 342 343 344 345 346 347 348 349 350 351 352 353 354 355 356 357 358 359 360 361 362 363 364 365 366 367 368 369 370 371 372 373 374 375 376 377 378 379 380 381 382 383 384 385 386 387 388 389 390 391 392 393 394 395 396 397 398 399 400 401 402 403 404 405 406 407 408 409 410 411 412 413 414 415 416 417 418 419 420 421 422 423 424 425 426 427 428 429 430 431 432 433 434 435 436 437 438 439 440 441 442 443 444 445 446 447 448 449 450 451 452 453 454 455 456 457 458 459 460 461 462 463 464 465 466 467 468 469 470 471 472 473 474 475 476 477 478 479 480 481 482 483 484 485 486 487 488 489 490 491 492 493 494 495 496 497 498 499 500 501 502 503 504 505 506 507 508 509 510 511 512 513 514 515 516 517 518 519 520 521 522 523 524 525 526 527 528 529 530 531 532 533 534 535 536 537 538 539 540 541 542 543 544 545 546 547 548 549 550 551 552 553 554 555 556 557 558 559 560 561 562 563 564 565 566 567 568 569 570 571 572 573 574 575 576 577 578 579 580 581 582 583 584 585 586 587 588 589 590 591 592 593 594 595 596 597 598 599 600 601 602 603 604 605 606 607 608 609 610 611 612 613 614 615 616 617 618 619 620 621 622 623 624 625 626 627 628 629 630 631 632 633 634 635 636 637 638 639 640 641 642 643 644 645 646 647 648 649 650 651 652 653 654 655 656 657 658 659 660 661 662 663 664 665 666 667 668 669 670 671 672 673 674 675 676 677 678 679 680 681 682 683 684 685 686 687 688 689 690 691 692 693 694 695 696 697 698 699 700 701 702 703 704 705 706 707 708 709 710 711 712 713 714 715 716 717 718 719 720 721 722 723 724 725 726 727 728 729 730 731 732 733 734 735 736 737 738 739 740 741 742 743 744 745 746 747 748 749 750 751 752 753 754 755 756 757 758 759 760 761 762 763 764 765 766 767 768 769 770 771 772 773 774 775 776 777 778 779 780 781 782 783 784 785 786 787 788 789 790 791 792 793 794 795 796 797 798 799 800 801 802 803 804 805 806 807 808 809 810 811 812 813 814 815 816 817 818 819 820 821 822 823 824 825 826 827 828 829 830 831 832 833 834 835 836 837 838 839 840 841 842 843 844 845 846 847 848 849 850 851 852 853 854 855 856 857 858 859 860 861 862 863 864 865 866 867 868 869 870 871 872 873 874 875 876 877 878 879 880 881 882 883 884 885 886 887 888 889 890 891 892 893 894 895 896 897 898 899 900 901 902 903 904 905 906 907 908 909 910 911 912 913 914 915 916 917 918 919 920 921 922 923 924 925 926 927 928 929 930 931 932 933 934 935 936 937 938 939 940 941 942 943 944 945 946 947 948 949 950 951 952 953 954 955 956 957 958 959 960 961 962 963 964 965 966 967 968 969 970 971 972 973 974 975 976 977 978 979 980 981 982 983 984 985 986 987 988 989 990 991 992 993 994 995 996 997 998 999 1000

290	295	300
Pro Lys Lys Ile Asp	Ala Asn Val Ser Val Ser	Tyr Val Ser Gly Val
305	310	315
Ile Ala Tyr Tyr Gln	Ala Asp Tyr Glu Leu Ala	Glu Gln His Leu Gln
325	330	335
Asp Gly Leu Arg Glu	Leu Lys Arg Met Asp	Glu Glu Gln Glu Val Asp
340	345	350
Tyr Tyr His Ala Leu	Ile Glu Phe Tyr Thr	Leu Leu Ala Lys Val Tyr
355	360	365
Glu Lys Gln Glu Leu	Tyr Asn Lys Ala Leu	Glu Ala Arg Asn Ser
370	375	380
Leu Lys Tyr Glu Thr	Arg Leu Phe Asp Lys	Asn Ser Asn Lys Thr Ile
385	390	395
Gln Lys Leu Arg Thr	Gln Tyr Asn Leu Asn	Glu Lys Glu Arg Val Val
405	410	415
Glu Gln Leu Ser Ala	Ile Asn Glu Lys Asn	Arg Arg Ile Asn Ile Leu
420	425	430
Ser Ala Ile Leu Ile	Val Leu Ala Leu Val	Thr Ile Phe Leu Leu Leu
435	440	445
Lys Arg Tyr Arg Ser	Arg Gln Arg Ile His	Glu Gly Met Leu Gln Ile
450	455	460
Ala Lys Leu Lys Gln	Gln Glu Ala Glu Leu	Leu Val Lys Leu Gln Lys
465	470	475
Thr Lys Leu Glu Glu	Arg Glu Arg Glu Phe	Gln Ser Leu Val His Glu
485	490	495
Ala Gln Gln Arg Lys	Val Gln Tyr Tyr Leu	Glu Gly Leu Glu Val Glu
500	505	510
Arg Lys Arg Leu Ala	Lys Glu Leu His Asp	Asn Val Ser Asn Glu Leu
515	520	525
Leu Ala Ile Lys Met	Lys Ile Thr Asp Gly	Thr Ser Ser Cys Glu Glu
530	535	540
Ile Met Asp Thr Leu	Gln Thr Leu Gln Ala	Glu Val Arg Gly Ile Ser
545	550	555
His Asp Leu Met Pro	Pro Ile Phe Lys Tyr	Ala Ser Leu Ser Glu Ile
565	570	575
Leu Gln Asp Tyr Val	Tyr Gln His Asn Gln	Pro Gly Gln Thr Glu Leu
580	585	590
Glu Leu Leu Leu Glu	Pro Glu Asp Asn Phe	Asp Asn Leu Ser Gln Lys
595	600	605
Val Ser Leu Glu Ile	Tyr Arg Ile Val Gln	Glu Ala Val Gly Asn Ser
610	615	620
Leu Lys His Ala Gln	Ala Thr Leu Val Lys	Ile Ile Leu Val Arg Glu
625	630	635
Asp Asn Lys Val Lys	Leu Thr Val Ser Asp	Asn Gly Arg Gly Phe Glu
645	650	655
Gln Gln Thr Gly Lys	Thr Gly Ile Gly Leu	Thr Ile Ile Lys Glu Arg
660	665	670
Val Glu Asn Leu Arg	Gly Thr Leu Thr Leu	Asn Ser Ala Pro Gly Lys
675	680	685
Gly Thr Glu Leu Ile	Val Glu Ile Asp Leu	Glu Asn Leu Glu Lys
690	695	700

<210> 9474

<211> 80

<212> PRT

<213> B.fragilis

<220>

<221> UNSURE

<222> (12),(33),(46),(47)

<223> Identity of amino acid sequences at the above locations are unknown.

<400> 9474

Trp	Arg	Ser	Arg	Arg	Met	His	Asp	Ala	Arg	Thr	Xaa	Ser	Ser	His	Ser
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His	Gly	Tyr	Ser	Arg	Phe	Leu	Leu	Thr	Ser	Phe	Ile	Thr	Ala	Tyr	Thr
			20					25					30		
Xaa	Thr	Ser	Leu	Ala	Arg	Arg	Glu	His	Cys	Pro	His	Leu	Xaa	Xaa	Arg
		35					40					45			
Val	Met	Ser	Ser	Arg	Leu	Phe	Ser	His	Cys	Asn	Lys	His	Val	Ala	Gly
	50					55					60				
Thr	Arg	Asp	Asp	Thr	Leu	Gln	Leu	Ile	Ser	Pro	Leu	Tyr	Ser	Lys	Ser
65					70					75					80

<210> 9475

<211> 64

<212> PRT

<213> B.fragilis

<400> 9475

Ser	Asn	Ile	Ser	Phe	Phe	Thr	Ser	Arg	Met	Asp	Ser	Ser	Gly	Glu	Ser
1				5					10					15	
Arg	Asp	Thr	Ser	Phe	Phe	Val	Asn	Tyr	Lys	Arg	Gly	Leu	Thr	Arg	Pro
			20					25					30		
Lys	Thr	Glu	Leu	Asp	Ser	Met	Ser	Lys	Arg	Lys	Leu	Thr	Thr	Lys	Phe
		35					40					45			
Glu	Glu	Glu	Pro	Pro	Lys	Asn	Arg	Ser	Phe	Ile	Phe	His	Pro	Leu	Phe
	50					55					60				

<210> 9476

<211> 318

<212> PRT

<213> B.fragilis

<400> 9476

Asn	Ile	Leu	Arg	Arg	Tyr	Ser	Asn	Lys	Pro	Ile	Ala	Ser	Asn	Leu	Lys
1				5					10					15	
Asn	Ser	Ile	Met	Trp	Leu	Leu	Leu	Ala	Phe	Leu	Ser	Ala	Thr	Leu	Leu
			20					25					30		
Gly	Phe	Tyr	Asp	Val	Phe	Lys	Lys	Lys	Ala	Leu	Lys	Asp	Asn	Ala	Val
		35					40					45			
Leu	Pro	Val	Leu	Phe	Phe	Asn	Thr	Leu	Phe	Ser	Ser	Leu	Ile	Phe	Leu
	50					55					60				
Pro	Phe	Ile	Leu	Leu	Ser	Ala	Phe	Ala	Pro	Gly	Val	Leu	Glu	Gly	Thr
65					70					75					80
Met	Leu	Asp	Val	Pro	Val	Val	Gly	Trp	Glu	Val	His	Lys	Phe	Ile	Ile
				85					90				95		
Ile	Lys	Ser	Phe	Ile	Val	Leu	Ser	Ser	Trp	Ile	Leu	Gly	Tyr	Phe	Gly
			100					105					110		
Met	Lys	His	Leu	Pro	Ile	Thr	Ile	Val	Gly	Pro	Ile	Asn	Ala	Thr	Arg
		115					120					125			
Pro	Val	Met	Val	Leu	Val	Gly	Ala	Met	Leu	Val	Phe	Gly	Glu	Arg	Leu
	130					135					140				
Asn	Leu	Tyr	Gln	Trp	Ile	Gly	Val	Met	Leu	Ala	Ile	Ile	Ser	Phe	Phe
145					150					155					160
Met	Leu	Ser	Arg	Ser	Gly	Lys	Lys	Glu	Gly	Ile	Asp	Phe	Lys	His	Asn
				165					170					175	
Lys	Trp	Ile	Leu	Phe	Ile	Ile	Leu	Ala	Ala	Val	Ala	Gly	Ala	Val	Ser

	180		185		190										
Gly	Leu	Tyr	Asp	Lys	Tyr	Leu	Met	Lys	Gln	Leu	Pro	Pro	Met	Val	Val
	195						200					205			
Gln	Ser	Trp	Tyr	Asn	Val	Tyr	Gln	Met	Phe	Ile	Met	Cys	Pro	Ile	Leu
	210						215				220				
Ala	Leu	Leu	Trp	Trp	Pro	Lys	Arg	Lys	Ser	Ser	Thr	Pro	Phe	Arg	Trp
225					230					235					240
Asp	Trp	Ala	Ile	Ile	Phe	Ile	Ser	Ile	Phe	Leu	Cys	Ala	Ala	Asp	Phe
			245						250					255	
Val	Tyr	Phe	Tyr	Ala	Leu	Ser	Tyr	Glu	Asp	Ser	Met	Ile	Ser	Ile	Val
		260						265					270		
Ser	Met	Val	Arg	Arg	Gly	Ser	Val	Ile	Val	Ser	Phe	Leu	Phe	Gly	Ala
	275						280					285			
Met	Val	Phe	Arg	Glu	Lys	Asn	Leu	Lys	Ser	Lys	Ala	Ile	Asp	Leu	Ile
	290					295					300				
Leu	Val	Leu	Ile	Gly	Met	Ile	Phe	Leu	Tyr	Leu	Gly	Thr	Lys		
305					310					315					

<210> 9477

<211> 318

<212> PRT

<213> B.fragilis

<400> 9477

Leu	Tyr	Lys	Ser	Met	Lys	Ala	Leu	Thr	Lys	Thr	Asp	Phe	Asn	Phe	Pro
1			5						10					15	
Gly	Gln	Lys	Ser	Val	Tyr	His	Gly	Lys	Val	Arg	Asp	Val	Tyr	Asn	Ile
		20					25						30		
Asn	Gly	Glu	Gln	Leu	Val	Met	Val	Ala	Thr	Asp	Arg	Ile	Ser	Ala	Phe
	35					40						45			
Asp	Val	Val	Leu	Pro	Glu	Gly	Ile	Pro	Tyr	Lys	Gly	Gln	Met	Leu	Asn
	50					55					60				
Gln	Ile	Ala	Ala	Lys	Phe	Leu	Asp	Ala	Thr	Thr	Asp	Ile	Cys	Pro	Asn
65				70					75					80	
Trp	Lys	Leu	Ala	Thr	Pro	Asp	Pro	Met	Val	Thr	Val	Gly	Val	Leu	Cys
			85						90					95	
Glu	Gly	Phe	Pro	Val	Glu	Met	Ile	Val	Arg	Gly	Tyr	Leu	Cys	Gly	Ser
		100						105					110		
Ala	Trp	Arg	Ala	Tyr	Lys	Asn	Gly	Val	Arg	Glu	Ile	Cys	Gly	Val	Lys
	115					120						125			
Leu	Pro	Glu	Gly	Met	Lys	Glu	Asn	Gln	Lys	Phe	Pro	Glu	Pro	Ile	Val
	130					135					140				
Thr	Pro	Thr	Thr	Lys	Ala	Glu	Met	Gly	Leu	His	Asp	Glu	Asp	Ile	Ser
145				150						155				160	
Lys	Glu	Glu	Ile	Leu	Ala	Gln	Gly	Leu	Ala	Thr	Pro	Glu	Glu	Tyr	Ala
			165						170					175	
Ile	Leu	Glu	Lys	Tyr	Thr	Leu	Ala	Leu	Phe	Lys	Arg	Gly	Thr	Glu	Ile
		180					185						190		
Ala	Ala	Glu	Arg	Gly	Leu	Ile	Leu	Val	Asp	Thr	Lys	Tyr	Glu	Phe	Gly
	195					200						205			
Lys	His	Asn	Gly	Thr	Ile	Tyr	Leu	Met	Asp	Glu	Ile	His	Thr	Pro	Asp
	210				215						220				
Ser	Ser	Arg	Tyr	Phe	Tyr	Ala	Glu	Gly	Tyr	Gln	Glu	Arg	Phe	Glu	Lys
225					230					235				240	
Gly	Glu	Ala	Gln	Lys	Gln	Leu	Ser	Lys	Glu	Phe	Val	Arg	Glu	Trp	Leu
			245						250					255	
Met	Glu	Asn	Gly	Phe	Gln	Gly	Lys	Glu	Gly	Gln	Lys	Val	Pro	Glu	Met
	260					265						270			
Thr	Pro	Ala	Ile	Val	Glu	Ser	Ile	Ser	Glu	Arg	Tyr	Ile	Glu	Leu	Phe

275 280 285
 Glu Asn Ile Thr Gly Glu Lys Phe Val Lys Glu Asp Thr Ser Asn Ile
 290 295 300
 Ala Glu Arg Ile Glu Lys Asn Val Met Ala Phe Leu Ala Lys
 305 310 315

<210> 9478
 <211> 399
 <212> PRT
 <213> B.fragilis

<400> 9478

Arg Phe Gln Ser Glu Ile Arg Leu Cys Lys Asn Thr Tyr Lys Cys Met
 1 5 10 15
 Lys Arg Ile Leu Leu Phe Leu Leu Ala Cys Cys Pro Met Leu Leu Cys
 20 25 30
 Ala Gln Glu Asp Asn Ser Lys Tyr Leu Ala Gly Ala Val Pro Val Val
 35 40 45
 Asn Gly Lys Val Ile Phe Ala Glu Val Ile Gln Ala Ser Asp Met Ser
 50 55 60
 Lys Arg Gln Ile Tyr Asp Ala Leu Leu Lys Trp Ala Glu Lys Arg Phe
 65 70 75 80
 Thr Pro Ser Lys Gly Gln Lys Gly Arg Val Ala Tyr Phe Asp Gly Lys
 85 90 95
 Lys Gly Gln Ile Ala Cys Leu Gly Glu Tyr Leu Gln Leu Ser Ala
 100 105 110
 Thr Asn Ser Phe Phe Leu Asp Arg Ala Thr Ile Lys Tyr Arg Leu Val
 115 120 125
 Ile Asn Cys Leu Asp Gly Ser Cys Lys Met Glu Met Tyr Asn Ile Ser
 130 135 140
 Tyr Phe His Gly Asp Asp Thr Glu Met Glu Ala Glu Asp Trp Ile Thr
 145 150 155 160
 Asp Glu Thr Gly Leu Asn Lys Ala Lys Thr Lys Val Val Ala Lys Tyr
 165 170 175
 Gly Lys Leu Arg Ile Lys Thr Ile Asp Leu Phe Asp Asp Leu Thr Glu
 180 185 190
 Gln Val Thr Lys Thr Leu Gly Gly Ala Lys Ser Glu Val Pro Leu Leu
 195 200 205
 Ala Lys Glu Pro Lys Val Thr Pro Glu Val Phe Asp Arg Glu Phe Pro
 210 215 220
 Lys Ala Val Glu Gln Gly Ala Met Ala Gly Tyr Lys His Ile Pro Ala
 225 230 235 240
 Asp Lys Ile Pro Gly Asn Ile Ile Lys Met Leu Ser Glu Asp Trp Met
 245 250 255
 Leu Ile Thr Ala Gly Thr Glu Asp Lys Tyr Asn Met Met Thr Ala Ser
 260 265 270
 Trp Gly Gly Leu Gly Tyr Leu Tyr Asn Lys Pro Val Ser Phe Cys Phe
 275 280 285
 Ile Tyr Pro Thr Arg Tyr Thr Tyr Gln Leu Met Glu Lys Asn Asp Thr
 290 295 300
 Tyr Thr Ile Ser Phe Tyr Thr Glu Thr Tyr Arg Asp Ala Leu Lys Tyr
 305 310 315 320
 Cys Gly Ser His Ser Gly Glu Asp Val Asp Lys Val Lys Gly Ala Gly
 325 330 335
 Leu Thr Pro Leu Thr Thr Pro Ser Gly Ser Lys Ala Phe Ser Glu Ala
 340 345 350
 Trp Met Ile Glu Cys Lys Lys Met Leu Ser Gln Pro Ile Thr Pro
 355 360 365
 Gly Ala Phe Asp Thr Pro Glu Leu Lys Glu Ala Trp Lys Asp Lys Ser

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370 375 380
 Leu His Thr Met Tyr Ile Gly Glu Ile Met Asn Val Trp Val Lys
 385 390 395

<210> 9479
 <211> 79
 <212> PRT
 <213> B.fragilis

<400> 9479
 Lys Gly Cys Gly Ser Gly Gly Lys Arg Asp Ile Glu Ser Gly Arg Leu
 1 5 10 15
 Lys Asn Ile Tyr Cys Gly Val Leu Leu Pro Gln Thr Asn Val Ser Lys
 20 25 30
 Leu Thr Met Glu Asp Lys Pro Ser Ile Leu Gly Arg Lys Asp Gly Lys
 35 40 45
 Lys Arg Glu Asn Ile Asp Leu Lys Glu Leu Tyr Gln Leu Tyr Asn Glu
 50 55 60
 Ile Asp Ser Tyr Ile Ser Gln Arg Tyr Asn Glu Leu Phe Gly Leu
 65 70 75

<210> 9480
 <211> 147
 <212> PRT
 <213> B.fragilis

<220>
 <221> UNSURE
 <222> (46), (79), (94), (101), (119), (122), (135), (136)
 <223> Identity of amino acid sequences at the above locations are unknown.

<400> 9480
 Ala Trp Cys Gly Pro Cys Asp Thr Val Leu Met Cys Ala Met Met Tyr
 1 5 10 15
 Gly Tyr Gly Glu Ala Gln Pro Ala Arg Arg Gly Asp His Val Asp Ala
 20 25 30
 Leu Cys Leu His Arg Leu Ala Val Ile Met His Met Cys Xaa Tyr Ala
 35 40 45
 Phe Glu Pro Leu Ser Cys Asp Glu Cys Ala His Ala Leu His Arg Gln
 50 55 60
 His Arg Leu Leu Leu Cys Leu Ala Val Tyr Met Ala Pro Ala Xaa Ser
 65 70 75 80
 Ser Cys Leu Thr Tyr Val Phe Leu Leu Met Ala Gln Ser Xaa His Ala
 85 90 95
 Arg Arg Thr His Xaa Ile Glu Ser Leu Ser Arg Ile Leu Thr Ile Pro
 100 105 110
 Pro Tyr Leu Val His His Xaa Val His Xaa Tyr Glu Ser Ser Ala Thr
 115 120 125
 Gly Ala Leu Ser Ser Pro Xaa Xaa Ser Cys Asn Val Val Ser Ser Ile
 130 135 140
 Leu Ser Leu
 145

<210> 9481
 <211> 316
 <212> PRT
 <213> B.fragilis

<400> 9481

Met Lys Lys Gly Ile Lys Ile Gly Val Ile Thr Leu Leu Leu Leu Leu
 1 5 10 15
 Thr Gly Cys Thr Ile Gly Gly Ser Phe Phe Met Leu Asn Tyr Ser Leu
 20 25 30
 Arg Pro Glu Ala Lys Ile Arg Ala Lys Asn Ala Asp Ser Tyr Pro Phe
 35 40 45
 Ile Tyr Lys Asn Tyr Pro Phe Leu Arg Pro Trp Val Asp Ser Leu Asn
 50 55 60
 Gln Ala His Ala Leu Arg Asp Thr Phe Val Leu Asn Pro Glu Gly Ile
 65 70 75 80
 Arg Leu His Ala Tyr Tyr Ile Ala Ala Pro Gln Pro Thr Lys Lys Thr
 85 90 95
 Ala Val Ile Val His Gly Tyr Thr Asp Asn Ala Ile Arg Met Phe Met
 100 105 110
 Ile Gly Tyr Leu Tyr Asn His Asp Leu Gln Tyr Asn Val Leu Leu Pro
 115 120 125
 Asp Leu Gln His Gln Gly Glu Ser Gly Gly Pro Ala Ile Gln Met Gly
 130 135 140
 Trp Lys Asp Arg Leu Asp Val Met Gln Trp Met His Ile Ala Asn Gln
 145 150 155 160
 Ile Tyr Gly Asp Ser Thr Gln Met Val Val His Gly Ile Ser Met Gly
 165 170 175
 Gly Ala Thr Thr Met Met Val Ser Gly Glu Ala Gln Pro Tyr Phe Val
 180 185 190
 Lys Cys Phe Val Glu Asp Cys Gly Tyr Thr Ser Val Trp Asp Glu Phe
 195 200 205
 Ser His Glu Leu Lys Ser Ser Phe His Leu Pro Ser Phe Pro Leu Met
 210 215 220
 Asn Thr Thr Ser Trp Leu Cys Gln Lys Lys Tyr Gly Trp Asn Phe Glu
 225 230 235 240
 Glu Ala Ser Ser Leu Asn Gln Val Lys Lys Ser His Leu Pro Met Phe
 245 250 255
 Phe Ile His Gly Asp Lys Asp Thr Tyr Val Pro Thr Trp Met Val Tyr
 260 265 270
 Pro Leu Tyr Glu Ala Lys Ser Ala Pro Lys Gln Leu Trp Ile Val Pro
 275 280 285
 Gly Ala Ala His Ala Val Ser Tyr Lys Glu Asn Lys Glu Glu Tyr Thr
 290 295 300
 Arg Lys Val Lys Glu Phe Thr Asp Arg Tyr Ile His
 305 310 315

<210> 9482

<211> 349

<212> PRT

<213> B.fragilis

<400> 9482

Ser Lys Ile Met Glu Phe Ser Ala Lys Gln Ile Ala Ala Phe Ile Gln
 1 5 10 15
 Gly Glu Ile Ile Gly Asp Glu Asn Ala Thr Val His Thr Phe Ala Lys
 20 25 30
 Ile Glu Glu Gly Ile Pro Gly Ala Ile Ser Phe Leu Ser Asn Pro Lys
 35 40 45
 Tyr Thr Pro Tyr Ile Tyr Glu Thr Lys Ala Ser Ile Val Leu Val Asn
 50 55 60
 Lys Asp Phe Thr Pro Glu Gln Glu Val Lys Ala Thr Leu Ile Lys Val
 65 70 75 80
 Asp Asn Ala Tyr Glu Ser Leu Ala Lys Leu Leu Asn Leu Tyr Glu Met
 85 90 95

Ser Lys Pro Lys Arg Thr Gly Ile Asp Glu Arg Ala Tyr Val Ala Glu
 100 105 110
 Thr Ala Lys Ile Gly Lys Asp Val Tyr Ile Ala Pro Phe Ala Cys Ile
 115 120 125
 Gly Asp His Ala Glu Val Gly Asp Asn Thr Val Ile His Pro His Ala
 130 135 140
 Thr Val Gly Gly Gly Ala Lys Ile Gly Ser Asn Cys Ile Leu Tyr Ala
 145 150 155 160
 Asn Ser Thr Val Tyr His Asp Cys Arg Val Gly Asn Asn Cys Ile Leu
 165 170 175
 His Ala Gly Cys Val Ile Gly Ala Asp Gly Phe Gly Phe Ala Pro Thr
 180 185 190
 Pro Gln Gly Tyr Glu Lys Ile Pro Gln Ile Gly Ile Val Ile Leu Glu
 195 200 205
 Asp Asn Val Glu Val Gly Ala Asn Thr Cys Ile Asp Arg Ala Thr Met
 210 215 220
 Gly Ala Thr Val Ile His Ser Gly Val Lys Leu Asp Asn Leu Val Gln
 225 230 235 240
 Ile Ala His Asn Asp Glu Ile Gly Ser His Thr Val Met Ala Ala Gln
 245 250 255
 Val Gly Ile Ala Gly Ser Thr Lys Val Gly Glu Trp Cys Met Phe Gly
 260 265 270
 Gly Gln Val Gly Ile Ala Gly His Leu Lys Ile Gly Asn Gln Val Asn
 275 280 285
 Leu Gly Ala Gln Ser Gly Val Pro Gly Asn Ile Lys Ser Gly Ser Gln
 290 295 300
 Leu Ile Gly Thr Pro Pro Met Glu Leu Lys Gln Phe Phe Lys Ala Ser
 305 310 315 320
 Ile Val Gln Lys Ser Leu Pro Glu Met Gln Ile Glu Leu Arg Asn Leu
 325 330 335
 Arg Lys Glu Ile Glu Glu Leu Lys Gln Gln Leu Asn Lys
 340 345

<210> 9483

<211> 304

<212> PRT

<213> B.fragilis

<400> 9483

Pro Ile Val Met Thr Ala Lys Thr Leu Ile Val Leu Ile Gly Pro Thr
 1 5 10 15
 Gly Val Gly Lys Thr Glu Leu Ser Leu Arg Ile Ala Glu Tyr Phe Lys
 20 25 30
 Thr Ser Ile Ile Ser Ser Asp Ser Arg Gln Leu Tyr Ala Glu Leu Lys
 35 40 45
 Ile Gly Thr Ala Ala Pro Thr Pro Glu Gln Leu Lys Arg Val Pro His
 50 55 60
 Tyr Phe Val Gly Thr Leu Gln Leu Thr Asp Tyr Tyr Ser Ala Ala Gln
 65 70 75 80
 Tyr Glu Thr Glu Val Met Ser Val Leu Glu Gln Leu Phe Gln Gln His
 85 90 95
 His Val Val Leu Leu Thr Gly Gly Ser Met Met Tyr Val Asp Ala Ile
 100 105 110
 Cys Lys Gly Ile Asp Asp Ile Pro Thr Val Asp Ala Glu Thr Arg Glu
 115 120 125
 Leu Leu Leu His Lys Tyr Asp Thr Glu Gly Leu Asp Asn Leu Cys Ala
 130 135 140
 Glu Leu Lys Leu Leu Asp Pro Glu Tyr Tyr Lys Ile Val Asp Leu Lys
 145 150 155 160

$\frac{d}{dt} \left(\frac{\partial L}{\partial \dot{x}} \right) = \frac{\partial L}{\partial x}$

<213> B.fragilis

Ser 1	Ser	Ile	Phe	Ala 5	Arg	Lys	Asn	Gln	Val 10	Asn	Gly	Met	Ser	Val 15	Gln
Arg	Tyr	Phe	Ile 20	Tyr	Leu	Ala	Tyr	Asp 25	Gly	Thr	His	Tyr	His 30	Gly	Trp
Gln	Ile	Gln	Pro 35	Asn	Gly	Ile	Ser	Ile 40	Gln	Glu	Cys	Leu 45	Met	Lys	Ala
Leu	Ala	Thr	Phe 50	Leu	Arg	Lys 55	Asp	Thr	Glu	Val	Ile 60	Gly	Ala	Gly	Arg
Thr 65	Asp	Ala	Gly 70	Val	His	Ala 75	Ser	Leu	Met	Val	Ala 80	His	Phe	Asp	Tyr
Glu	Gly	Glu	Pro 85	Leu	Asp	Val	Asp	Lys 90	Val	Ala	Glu	Lys 95	Leu	Asn	Arg
Leu	Leu	Pro	Gln 100	Asp	Ile	Ser	Val	Tyr 105	Lys	Val	Cys	Arg 110	Val	Lys	Pro
Asp	Ala	His 115	Ala	Arg	Phe	Asp 120	Ala	Thr	Ala	Arg	Thr	Tyr 125	Lys	Tyr	Tyr
Ile	Thr 130	Thr	Val	Lys	Phe	Pro 135	Phe	Asn	Arg	Gln	Tyr 140	Arg	Tyr	Arg	Ile
His 145	Asn	Pro	Leu	Asp 150	Phe	Gln	Lys	Met	Asn	Glu	Ala 155	Ala	Leu	Thr	Leu
Phe	His	Tyr	Ser 165	Asp	Phe	Thr	Ser	Phe 170	Ser	Lys	Leu	His 175	Thr	Asp	Val
Lys	Thr	Asn 180	Ile	Cys	Lys	Ile	Met	His 185	Ala	Glu	Trp	Thr 190	Gln	Glu	Asp
Glu	Tyr	Thr 195	Trp	Val	Phe	Thr	Ile	Gln 200	Ala	Asp	Arg	Phe 205	Leu	Arg	Asn
Met	Val 210	Arg	Ala	Ile	Val	Gly 215	Thr	Leu	Leu	Glu	Val	Gly 220	Arg	Gly	Lys
Leu 225	Ser	Val	Asp	Asp 230	Phe	Arg	Lys	Ile	Ile	Glu	Gln 235	Gln	Asn	Arg	Cys
Lys	Ala	Gly	Thr 245	Ser	Ala	Pro	Gly	Asn 250	Ala	Leu	Phe	Leu 255	Val	Asn	Val
Glu	Tyr	Pro	Gln 260	Glu	Ile	Phe	Glu								

<210> 9485
 <211> 375
 <212> PRT
 <213> B.fragilis

<400> 9485

Lys	Lys	Val	Ile	Tyr	Arg	Cys	Phe	Ser	Phe	Thr	Val	Thr	Lys	Thr	His
1			5						10					15	
Thr	Cys	Leu	His	Gly	Trp	Ser	Ile	Leu	Phe	Met	Lys	Pro	Asn	Arg	Pro
		20						25					30		
Gln	Ser	Asn	Ser	Gly	Leu	Tyr	Arg	Glu	Leu	His	Met	Pro	Tyr	Leu	Ile
		35					40					45			
Lys	Arg	Thr	Arg	Lys	Asn	Thr	Pro	Gly	Lys	Ser	Lys	Asn	Leu	Gln	Thr
	50					55					60				
Ala	Thr	Phe	Thr	Asp	Met	Lys	Gln	Ile	Leu	Thr	Tyr	Leu	Leu	Phe	Ile
65					70					75					80
Trp	Ile	Leu	Leu	Pro	Leu	Lys	Ala	Glu	Glu	Lys	Ile	Tyr	Thr	Val	Asp
				85					90					95	
Asn	Ile	Pro	Lys	Val	His	Leu	Gln	Asn	Lys	Met	Gln	Tyr	Val	Cys	Asn
		100						105					110		
Pro	Ala	Gly	Ile	Leu	Ser	Gln	Gln	Ala	Cys	Asp	Glu	Ile	Asp	Ala	Met
		115					120					125			
Leu	Tyr	Ala	Leu	Glu	Gln	Gln	Thr	Gly	Ile	Glu	Thr	Val	Val	Ala	Ile
	130					135					140				
Val	Pro	Ser	Ile	Gly	Asp	Lys	Asp	Cys	Phe	Glu	Phe	Ser	His	Gln	Leu
145					150					155					160
Leu	Asn	Gln	Trp	Gly	Val	Gly	Lys	Lys	Gly	Lys	Asp	Asn	Gly	Leu	Val
				165					170					175	
Ile	Leu	Leu	Val	Thr	Asp	Gln	Arg	Cys	Ile	Gln	Phe	Tyr	Thr	Gly	Tyr
			180				185						190		
Gly	Leu	Glu	Gly	Ile	Leu	Pro	Asp	Ala	Ile	Cys	Lys	Arg	Ile	Gln	Met
		195					200					205			
Gln	Glu	Met	Ile	Pro	Tyr	Leu	Lys	Lys	Gly	Glu	Trp	Asn	Gln	Gly	Met
		210				215					220				
Leu	Ala	Gly	Val	Lys	Ala	Val	Cys	Gln	Arg	Leu	Asp	Gly	Ser	Met	Val
225					230					235					240
Asn	Asp	Asp	Glu	Gly	Arg	Gly	Glu	Glu	Gly	Ile	Ser	Val	Ser	Met	Leu
			245						250					255	
Leu	Val	Val	Ile	Leu	Ser	Phe	Ile	Thr	Ile	Ala	Gly	Val	Val	Gly	Ile
			260					265					270		
Leu	Ala	Val	Arg	Ala	Ser	Thr	Arg	Cys	Pro	Lys	Cys	Gly	Lys	His	Gln
		275					280					285			
Leu	Gln	Arg	Ser	Ser	Thr	Lys	Leu	Ile	Ser	Asn	Arg	Asn	Gly	Val	Lys
		290				295					300				
Thr	Glu	Asp	Ile	Ile	Tyr	Thr	Cys	Arg	Asn	Cys	Gly	His	Thr	Val	Val
305					310					315					320
Arg	Arg	Gln	Gln	Ser	Tyr	Asp	Asp	Asn	Tyr	Arg	Gly	Arg	Gly	Gly	Gly
				325					330					335	
Gly	Pro	Phe	Ile	Gly	Gly	Phe	Gly	Gly	Gly	Ser	Phe	Gly	Ser	Gly	Gly
			340				345					350			
Gly	Gly	Gly	Phe	Ser	Gly	Gly	Ser	Phe	Gly	Gly	Gly	Ser	Gly	Gly	Gly
		355					360					365			
Gly	Gly	Ala	Gly	Ser	Arg	Phe									
		370				375									

<210> 9486
 <211> 230
 <212> PRT

<213> B.fragilis

<400> 9486

Lys Arg Leu Ile Met Asn Gln Ser Lys Cys Arg Ser His Phe Val Ile
 1 5 10 15
 Ser Ile Phe Leu Cys Phe Ile Leu Pro Cys Leu Ala Gly Cys Lys Lys
 20 25 30
 Lys Asp Met Ser Leu Lys Leu Asn Glu Pro Arg Asn Ile Lys Gly Val
 35 40 45
 Val Ser Tyr Lys Arg Ser Phe Gly Asp Leu Asn Asp Val Gln Leu Lys
 50 55 60
 Ala Ala His Ala Trp Gly Ile Ala Pro Leu Ala Ser Arg Glu Glu Ala
 65 70 75 80
 Glu Glu Met Asp Gly Lys Leu Val His Ile Val Asp Asn Asp Phe Tyr
 85 90 95
 Val Val Asp Ser Leu Thr His Ser Ile Pro Tyr Leu Val Pro Arg Ala
 100 105 110
 Ser Ala Leu Leu Asp Thr Ile Gly Ala Asn Phe Leu Asp Ser Leu Thr
 115 120 125
 Ala Lys Gly Leu Asn Pro Asn Lys Ile Ile Val Thr Ser Val Leu Arg
 130 135 140
 Thr Glu Asn Asp Val Lys Arg Leu Arg Arg Asn Gly Asn Ala Ser
 145 150 155 160
 Lys Asn Ser Cys His Phe Tyr Gly Thr Thr Phe Asp Val Ser Trp Lys
 165 170 175
 Arg Phe Lys Lys Val Glu Asp Glu Asp Gly Arg Pro Leu Gln Asp Val
 180 185 190
 Ser Ala Asp Thr Leu Lys Leu Val Leu Ala Glu Val Leu Arg Asp Val
 195 200 205
 Arg Lys Ala Asp Lys Cys Tyr Val Lys Tyr Glu Leu Lys Gln Gly Cys
 210 215 220
 Phe His Ile Thr Thr Arg
 225 230

<210> 9487

<211> 340

<212> PRT

<213> B.fragilis

<400> 9487

Ile Asp Ser Met Ile Glu Lys Leu Ile Val Leu Glu Asp Ile Asp Pro
 1 5 10 15
 Val Ile Phe Tyr Gly Val Asn Asn Ala Asn Ile Gln Leu Ile Lys Ala
 20 25 30
 Leu Tyr Pro Lys Leu Arg Ile Val Ala Arg Gly Asn Val Ile Lys Val
 35 40 45
 Leu Gly Asp Glu Glu Glu Met Cys Ala Phe Glu Asp Asn Ile Thr Lys
 50 55 60
 Leu Glu Lys Tyr Cys Ala Glu Tyr Asn Ser Leu Lys Glu Glu Val Ile
 65 70 75 80
 Ile Asp Ile Ile Lys Gly Asn Ala Pro Gln Ala Glu Lys Ala Gly Asn
 85 90 95
 Val Ile Val Phe Ser Val Thr Gly Lys Pro Ile Ile Pro Arg Ser Glu
 100 105 110
 Asn Gln Leu Lys Leu Val Glu Gly Phe Ala Lys Asn Asp Met Val Phe
 115 120 125
 Ala Ile Gly Pro Ala Gly Ser Gly Lys Thr Tyr Thr Ala Ile Ala Leu
 130 135 140
 Ala Val Arg Ala Leu Lys Asn Lys Glu Ile Lys Lys Ile Ile Leu Ser

145		150		155		160
Arg	Pro	Ala	Val	Glu	Ala	Gly
		165		170		175
Met	Lys	Asp	Lys	Ile	Asp	Pro
		180		185		190
Gln	Asp	Met	Ile	Pro	Ala	Ala
		195		200		205
Ile	Ile	Gln	Ile	Ala	Pro	Leu
		210		215		220
Asp	Ala	Val	Val	Ile	Leu	Asp
		225		230		235
Ile	Lys	Met	Phe	Leu	Thr	Arg
		245		250		255
Thr	Gly	Asp	Met	Thr	Gln	Ile
		260		265		270
Leu	Val	Gln	Ala	Leu	Arg	Ile
		275		280		285
Val	Glu	Leu	Asn	Lys	Lys	Asp
		290		295		300
Ile	Val	Asp	Ala	Tyr	Glu	Lys
		305		310		315
Glu	Lys	Leu	Asn	Gly	Glu	Arg
		325		330		335
Val	Gly	Asn	Leu			
		340				

<210> 9488

<211> 332

<212> PRT

<213> B.fragilis

<400> 9488

Asn	Tyr	Leu	Ile	Met	Asn	Leu	Asn	Thr	Pro	Val	Glu	Ile	Pro	Ser	Gly
1				5					10					15	
Phe	Thr	Pro	Ile	Ser	His	Ala	Gln	Gln	Leu	Leu	Ile	Met	Gly	Ser	Cys
		20						25					30		
Phe	Ala	Glu	Asn	Ile	Gly	Thr	Leu	Leu	Ala	Glu	Asn	Lys	Phe	Arg	Ile
		35					40					45			
Asp	Ile	Asn	Pro	Phe	Gly	Ile	Leu	Tyr	Asn	Pro	Arg	Ser	Ile	Ser	Met
		50				55					60				
Ala	Leu	Arg	Glu	Ile	Ile	Ser	Gln	Lys	Gln	Tyr	Lys	Ala	Ser	Asp	Leu
		65			70				75					80	
Phe	Leu	His	Arg	Glu	Cys	Trp	His	Ser	Pro	Met	His	His	Gly	Ser	Phe
		85						90					95		
Ser	Ala	Ala	Thr	Leu	Ala	Asp	Thr	Leu	Arg	Asn	Ile	Gln	Ser	Arg	Leu
		100					105						110		
Glu	Gln	Ala	His	Lys	Glu	Leu	Lys	Gln	Leu	Asp	Arg	Leu	Met	Leu	Thr
		115					120					125			
Phe	Gly	Thr	Ala	Tyr	Val	Tyr	Glu	Gln	Lys	Glu	Thr	Gly	Lys	Val	Val
		130				135					140				
Ala	Asn	Cys	His	Lys	Leu	Pro	Glu	Lys	Asn	Phe	Ile	Arg	Arg	Arg	Leu
		145			150				155						160
Glu	Ile	Asp	Glu	Ile	Val	Glu	Asp	Tyr	Thr	Leu	Leu	Leu	Asp	Glu	Leu
		165						170					175		
Ile	Ser	Leu	Asn	Pro	Gln	Leu	Lys	Ile	Leu	Phe	Thr	Val	Ser	Pro	Ile
		180					185						190		
Arg	His	Ile	Arg	Asp	Gly	Met	His	Ala	Asn	Gln	Leu	Ser	Lys	Ser	Val
		195				200						205			
Leu	Leu	Leu	Ala	Ile	Asp	Arg	Leu	Met	Gln	Arg	Tyr	Pro	Gln	Val	Thr

210 215 220
 Cys Tyr Phe Pro Ser Tyr Glu Ile Val Leu Asp Glu Leu Arg Asp Tyr
 225 230 235 240
 Arg Phe Tyr Ala Asp Asp Met Val His Pro Ser Thr Leu Thr Val Asn
 245 250 255
 Tyr Leu Trp Glu Arg Phe Ser Glu Thr Phe Phe Thr Pro Glu Thr Gln
 260 265 270
 Ser Leu Ile Lys Glu Cys Glu Thr Ile Arg Lys Ala Ile Ala His Lys
 275 280 285
 Pro Phe His Pro Glu Ser Glu Glu His Lys Arg Phe Leu Gly Gln Ile
 290 295 300
 Val Leu Lys Ile Glu Arg Leu Asn Gly Lys Tyr Pro Tyr Leu Asp Phe
 305 310 315 320
 Glu Lys Glu Thr Asn Met Cys Arg Leu Ala Leu Gln
 325 330

<210> 9489
 <211> 79
 <212> PRT
 <213> B.fragilis

<400> 9489
 Tyr Asn Thr Val Met Thr Asn Leu Phe Leu Leu Gly Phe Met Pro Ser
 1 5 10 15
 Gly Ser Glu Trp Ile Ile Ile Leu Leu Val Ile Leu Leu Leu Phe Gly
 20 25 30
 Gly Lys Lys Ile Pro Glu Leu Met Arg Gly Leu Gly Lys Gly Val Lys
 35 40 45
 Ser Phe Lys Glu Gly Val Asn Glu Ala Lys Glu Glu Ile Asn Lys Ala
 50 55 60
 Lys Glu Glu Ile Asp Glu Pro Glu Asn Lys Glu Lys Lys Asp Asn
 65 70 75

<210> 9490
 <211> 61
 <212> PRT
 <213> B.fragilis

<400> 9490
 Pro His Pro Val Gly Tyr Asp Ile Leu Leu Pro Ala Pro Tyr Ala Val
 1 5 10 15
 Thr Trp Val His Tyr His Met Thr Asn Arg Tyr Asp Cys Gln Asn Phe
 20 25 30
 Asn Cys Thr Tyr Arg Ser Tyr Arg Cys Arg Lys Asn Gly Val Lys Pro
 35 40 45
 Pro His Ser Arg Ile Phe Gln Asp Glu Tyr His Phe Val
 50 55 60

<210> 9491
 <211> 135
 <212> PRT
 <213> B.fragilis

<400> 9491
 Thr Lys Ser Phe Arg Tyr Leu Cys Ser Asn Glu Glu Lys Val Met Lys
 1 5 10 15
 Arg Leu Thr Ala Lys Glu Glu Glu Ile Met Gly Phe Phe Trp Glu Lys
 20 25 30
 Gly Pro Leu Phe Val Lys Glu Ile Leu Ala Phe Tyr Asp Glu Pro Lys

35	40	45
Pro His Phe Asn Thr Leu Ser Thr Ile Val Arg Gly Leu Glu Glu Lys		
50	55	60
Gly Phe Leu Ala His His Thr Tyr Gly Asn Thr Tyr Gln Tyr Tyr Ala		
65	70	75
Val Val Ser Glu Ser Asp Phe Ser Lys Arg Thr Leu Lys Ser Val Ile		
	85	90
Ser Lys Tyr Phe Asn Asn Ser Tyr Leu Ser Ala Val Ser Ser Leu Val		
	100	105
Lys Glu Glu Asp Ile Ser Leu Asp Asp Leu Lys Lys Leu Ile Gln Glu		
	115	120
Val Glu Gln Lys Asn Glu Glu		125
130	135	

<210> 9492

<211> 437

<212> PRT

<213> B.fragilis

<400> 9492

Asn Arg Glu Phe Cys Arg Cys Arg Pro Cys Cys Cys Gln Arg Ser Ala		
1	5	10
Arg Ala Asn Gly Arg Thr Ala Glu Ser Tyr Phe Ile Met Pro His Glu		
	20	25
Arg Lys Ile Ile Asn Asp Pro Val Phe Gly Phe Ile Asn Ile Pro Lys		
	35	40
Gly Leu Leu Tyr Asp Ile Val Arg His Pro Leu Leu Gln Arg Leu Asn		
	50	55
Arg Ile Lys Gln Val Gly Leu Ser Ser Val Val Tyr Pro Gly Ala Gln		
65	70	75
His Thr Arg Phe Gln His Ser Leu Gly Ala Phe Tyr Leu Met Ser Glu		
	85	90
Ala Ile Thr Gln Leu Ala Ser Lys Gly Asn Phe Ile Phe Asp Ser Glu		
	100	105
Ala Glu Ala Val Gln Ala Ala Ile Leu Leu His Asp Ile Gly His Gly		
	115	120
Pro Phe Ser His Val Leu Glu Asp Thr Ile Val Lys Gly Val Ser His		
	130	135
Glu Glu Ile Ser Leu Met Leu Met Glu Arg Met Asn Arg Glu Met Asn		
145	150	155
Gly Gln Leu Ser Leu Ala Ile Gln Ile Phe Lys Asp Glu Tyr Pro Lys		
	165	170
Arg Phe Leu His Gln Leu Val Ser Gly Gln Leu Asp Met Asp Arg Leu		
	180	185
Asp Tyr Leu Arg Arg Asp Ser Phe Tyr Thr Gly Val Ser Glu Gly Asn		
	195	200
Ile Gly Ser Ala Arg Ile Ile Lys Met Leu Asp Val Ala Asp Asp His		
	210	215
Leu Val Val Glu Ser Lys Gly Ile Tyr Ser Ile Glu Asn Phe Leu Thr		
225	230	235
Ala Arg Arg Leu Met Tyr Trp Gln Val Tyr Leu His Lys Thr Ser Val		
	245	250
Ala Tyr Glu Arg Met Leu Ile Ser Ala Leu Leu Arg Ala Lys Glu Leu		
	260	265
Ala Ser Lys Gly Val Glu Leu Phe Ala Ser Pro Ala Leu Lys Phe Phe		
	275	280
Leu Tyr Asn His Ile Asp Pro Glu Val Phe Tyr Asn Asn Pro Asp Cys		
	290	295
Leu Glu Asn Phe Ile Gln Leu Asp Asp Asn Asp Ile Trp Thr Ala Leu		300

305 310 315 320
 Lys Val Trp Ser Thr His Thr Asp Lys Val Leu Ser Thr Leu Ser Leu
 325 330 335
 Gly Met Ile Asn Arg Asn Ile Phe Lys Val Glu Ile Cys Ser Glu Pro
 340 345 350
 Ile Ser Glu Glu Arg Lys Lys Glu Leu Thr Leu Leu Ile Ser Arg Gln
 355 360 365
 Leu Gly Ile Thr Leu Ser Glu Ala Asp Tyr Phe Val Ser Thr Pro Ser
 370 375 380
 Ile Glu Lys Asn Met Tyr Asp Ser Ala Asp Ser Ile Asp Ile Ile
 385 390 395 400
 Tyr Lys Asp Gly Thr Ile Lys Asn Ile Ala Glu Ala Ser Asp Met Leu
 405 410 415
 Asn Ile Ser Leu Leu Ser Lys Lys Val Lys Lys Tyr Tyr Ile Cys Tyr
 420 425 430
 Leu Arg Trp Asp Arg
 435

<210> 9493

<211> 287

<212> PRT

<213> B.fragilis

<400> 9493

Arg Val Ser Thr Val Thr Ala Ala Val Thr Pro Lys Thr Glu Met Glu
 1 5 10 15
 Arg Thr Lys Ala Glu Thr Glu Thr Gly Lys Arg Lys Arg Arg Ile Ile
 20 25 30
 Thr Ala Arg Asn Lys Leu Pro Met Ala Lys His Arg Val His Ser Pro
 35 40 45
 Leu Arg Leu Met His Arg Arg Thr Thr Val Leu Ser Leu Tyr Lys Thr
 50 55 60
 Asn Ser Val His Val Val Asn Val Arg Lys Thr Ile Ile Ala Thr Thr
 65 70 75 80
 Thr Asn His Val Lys Ile Met Ser Leu Val Asn Arg Val Ala Thr Arg
 85 90 95
 Thr Gly Lys Arg Val Lys Thr Asn Pro Val Asn Ser Ala Leu Leu Ala
 100 105 110
 Asn His Ala Asp Arg Ala Thr Met Asn Asn Leu Asn Val Ser Arg Lys
 115 120 125
 Leu Arg Lys Met Lys Ser Leu Lys Asn Ser Ile Cys Met Leu Leu
 130 135 140
 Thr Thr Trp Val Leu Thr Ala Cys Asp Glu Asn Thr Val Tyr His Ser
 145 150 155 160
 Tyr Gln Ser Thr Pro Pro Asp Gly Trp Lys Lys Ser Asp Thr Leu Phe
 165 170 175
 Phe Asn Val Ser Leu Lys Asp Ser Leu Ala Asn Leu Arg Leu Ser Val
 180 185 190
 Gly Val Arg Asn Ser Ser Asn Tyr Pro Tyr Gln Asn Leu Asn Ile Leu
 195 200 205
 Ile His Tyr Asn Leu Glu Asp Ser Thr Val Trp Lys Thr Asp Thr Leu
 210 215 220
 Lys Phe Ile Leu Thr Asp Arg Glu Gly Lys Trp Thr Gly Thr Asp Trp
 225 230 235 240
 Gly Ser Leu Tyr Gln Ser Ala Leu Pro Leu Lys Asp Trp Phe Val Lys
 245 250 255
 His Pro Gly Asn Tyr Thr Phe Lys Ile Val His Glu Met Lys Asn Glu
 260 265 270
 Gln Leu Thr Gly Ile Ser Asp Val Gly Leu Lys Ile Glu His Leu

275

280

285

<210> 9494
 <211> 174
 <212> PRT
 <213> B.fragilis

<400> 9494

Leu	Asn	Asp	His	Pro	Trp	Asn	Phe	His	Pro	Val	Val	Lys	Thr	Ala	Asp
1				5					10					15	
Ser	Ile	Lys	Val	Val	Leu	Gly	Met	Glu	Glu	Asp	Leu	Ala	Gly	Ala	Gly
			20					25					30		
Tyr	Asn	Val	Asn	Gln	Ser	Lys	Ile	Ala	Ile	Gly	Ser	Gly	Gly	Leu	Thr
			35				40					45			
Gly	Lys	Gly	Phe	Leu	Asn	Gly	Thr	Gln	Thr	Lys	Leu	Lys	Tyr	Val	Pro
	50					55					60				
Glu	Gln	Asp	Thr	Asp	Phe	Ile	Phe	Cys	Thr	Val	Gly	Glu	Glu	Gln	Gly
65					70					75				80	
Phe	Val	Gly	Ser	Ala	Ala	Val	Leu	Leu	Leu	Phe	Leu	Ala	Leu	Ile	Leu
				85					90					95	
Arg	Leu	Ile	Ala	Thr	Ser	Glu	Arg	Gln	Thr	Ser	Thr	Phe	Gly	Arg	Val
			100					105					110		
Tyr	Gly	Tyr	Ser	Val	Val	Ser	Ile	Phe	Leu	Phe	His	Leu	Phe	Ile	Asn
		115					120					125			
Ile	Gly	Met	Val	Leu	Gly	Leu	Thr	Pro	Val	Ile	Gly	Ile	Pro	Leu	Pro
	130					135					140				
Phe	Phe	Ser	Tyr	Gly	Gly	Ser	Ser	Leu	Trp	Gly	Phe	Thr	Ile	Leu	Leu
145					150					155				160	
Phe	Ile	Phe	Leu	Arg	Ile	Asp	Ala	Gly	Arg	Ser	Ile	Arg	Leu		
				165					170						

<210> 9495
 <211> 115
 <212> PRT
 <213> B.fragilis

<400> 9495

Gln	Lys	Val	Lys	Ser	Ser	Tyr	Arg	Lys	Arg	Lys	Asn	Lys	Arg	Arg	Lys
1				5					10					15	
Lys	Ile	Glu	Asn	Glu	Glu	Asn	Arg	Glu	Lys	Arg	Gly	Tyr	Phe	Leu	Gly
			20					25					30		
Lys	Gly	Ile	Ser	Ala	Gly	Pro	Lys	Gly	Ile	Val	Ala	Ile	Lys	Ala	Ser
			35				40					45			
Ile	Asp	Thr	Ile	Lys	Ala	Gly	Met	Ser	Val	Ile	Arg	Ile	Ser	Met	Ile
	50					55					60				
Val	Ile	Arg	Ala	Ser	Ile	Gly	Ala	Ile	Lys	Val	Ser	Ile	Gly	Ala	Ile
65					70					75				80	
Arg	Ala	Gly	Ile	Gly	Val	Phe	Lys	Ala	Asn	Ala	Gly	Ala	Ile	Arg	Lys
				85				90						95	
Asn	Ile	Cys	Asp	Gln	Glu	Ser	Phe	Ile	Ile	Lys	Tyr	Phe	His	Lys	Gln
			100					105					110		
Asn	Leu	Gly													
		115													

<210> 9496
 <211> 100
 <212> PRT
 <213> B.fragilis

<400> 9496

Pro Ile Phe Leu Thr Ala Ala Ser Arg Arg Ser Leu Asp Arg Val Ser
 1 5 10 15
 Val Pro Met Trp Gly Thr Phe Leu Ser Glu Pro Leu Ser Ile Glu Gly
 20 25 30
 Leu Val Ser Arg Tyr Leu Thr Asn Asn Leu Met Glu Arg Ile Pro Ile
 35 40 45
 Leu Tyr Arg Asn Pro Leu Ile Met Lys Pro Cys Gly Ile Ile Met Leu
 50 55 60
 Ser Gly Ile Asn Leu Ser Phe Glu Arg Leu Ser Pro Ser Lys Gly Gln
 65 70 75 80
 Val Gly Tyr Val Leu Leu Thr Arg Ala Pro Val Ala Ser Lys Glu Ser
 85 90 95
 Lys Leu Ser Ser
 100

<210> 9497

<211> 63

<212> PRT

<213> B.fragilis

<400> 9497

Pro Pro Thr Lys Leu Asp Asp Ile Pro Ser Glu Cys Arg Val Val Pro
 1 5 10 15
 Phe Gly Asn Leu Arg Ile Asn Gly His Leu His Leu Pro Glu Ala Tyr
 20 25 30
 Arg Ser Leu Ser Arg Pro Ser Ser Pro Pro Arg Ala Lys Ala Ser Ala
 35 40 45
 Met Arg Pro Tyr Leu Leu Ser Phe Ile Ala Arg Asp His Phe Leu
 50 55 60

<210> 9498

<211> 362

<212> PRT

<213> B.fragilis

<400> 9498

Gln Gln Lys Lys Asn His Asn Trp Glu Gln Arg Gln Ser Phe Gln Val
 1 5 10 15
 Leu Gln Arg Phe Arg Phe Ile Phe Phe Ser Tyr Phe Cys Pro Asn Met
 20 25 30
 His Pro Ser Ala Arg Ile Ala Lys Thr Asn Lys Lys Ile Met Arg Val
 35 40 45
 Ile Asp Leu Ile His Ser Asn Glu Lys Thr Ala Phe Ser Phe Glu Ile
 50 55 60
 Leu Pro Pro Leu Lys Gly Thr Gly Ile Glu Lys Leu Tyr Gln Thr Ile
 65 70 75 80
 Asp Thr Leu Arg Glu Phe Asp Pro Lys Tyr Ile Asn Ile Thr Thr His
 85 90 95
 Arg Ser Glu Tyr Val Tyr Arg Asp Leu Gly Asn Gly Leu Phe Gln Arg
 100 105 110
 Asn Arg Leu Arg Arg Arg Pro Gly Thr Val Ala Val Ala Ala Ile
 115 120 125
 Gln Asn Lys Tyr Asn Ile Thr Val Val Pro His Ile Leu Cys Ser Gly
 130 135 140
 Phe Thr Gln Glu Glu Thr Glu Tyr Val Leu Leu Asp Leu Gln Phe Leu
 145 150 155 160
 Gly Ile Thr Asp Leu Leu Val Leu Arg Gly Asp Lys Ala Lys His Glu
 165 170 175

Thr Val Phe Thr Pro Glu Gly Asp Gly His His His Ala Leu Asp Leu
 180 185 190
 Gln Gln Gln Ile Asn Asn Phe Asn Lys Gly Ile Phe Val Asp Gly Ser
 195 200 205
 Glu Met Lys Val Thr Asn Thr Pro Phe Ser Tyr Gly Val Ala Cys Tyr
 210 215 220
 Pro Glu Lys His Glu Glu Ala Pro Asn Ile Asp Met Asp Ile Tyr Trp
 225 230 235 240
 Leu Lys Lys Lys Val Glu Ala Gly Ala Glu Tyr Ala Val Thr Gln Leu
 245 250 255
 Phe Tyr Asp Asn Lys Lys Tyr Phe Glu Phe Val Glu Lys Val His Gln
 260 265 270
 Ala Gly Ile Asp Ile Pro Ile Ile Pro Gly Ile Lys Pro Phe Lys Lys
 275 280 285
 Ile Ser Gln Leu Asn Met Val Pro Lys Thr Phe Lys Val Asp Leu Pro
 290 295 300
 Glu Glu Leu Thr Lys Glu Ala Leu Lys Cys Gln Thr Asp Glu Glu Ala
 305 310 315 320
 Arg Gln Val Gly Ile Glu Trp Cys Ile Ser Gln Cys Lys Glu Leu Met
 325 330 335
 Ala Ala Gly Val Pro Ser Ile His Phe Tyr Ser Ile Gly Ala Val Asp
 340 345 350
 Ser Ile Lys Glu Val Ala Lys Ala Ile Tyr
 355 360

<210> 9499
 <211> 60
 <212> PRT
 <213> B.fragilis

<400> 9499
 Ala His Gly Phe Arg Asp Tyr Phe Thr Leu Leu Phe Glu Val Leu Phe
 1 5 10 15
 Thr Phe Pro Ser Gln Tyr Trp Phe Ala Ile Gly Leu Ser Gly Val Phe
 20 25 30
 Ser Leu Thr Gly Trp Ser Arg Leu Ile His Ala Glu Phe Leu Val Leu
 35 40 45
 Arg Ala Thr Gln Asp Thr Thr Leu Arg Leu Pro
 50 55 60

<210> 9500
 <211> 95
 <212> PRT
 <213> B.fragilis

<400> 9500
 Pro Tyr Arg Met Val Pro Ala Asp Ser Arg Arg Ile Pro Arg Ala Pro
 1 5 10 15
 Arg Tyr Ser Gly Tyr His Tyr Ala Ser Val Thr Leu Glu Tyr Arg Ala
 20 25 30
 Ile Thr Val Tyr Gly Thr Thr Phe Gln Ser Phe Leu Leu Asn Asn Cys
 35 40 45
 Leu Ala Arg Ala Trp Ser Tyr Asn Pro Thr His Ala Val Thr Trp Val
 50 55 60
 Val Trp Ala Asn Pro Arg Ser Leu Ala Thr Thr Arg Gly Ile Ile Ile
 65 70 75 80
 Tyr Phe Leu Phe Leu Gln Val Leu Arg Cys Phe Ser Ser Leu Arg
 85 90 95

<210> 9501
 <211> 492
 <212> PRT
 <213> B.fragilis

<400> 9501

Ser	Asn	Asn	Phe	Lys	Ile	Lys	Tyr	Met	Glu	Phe	Lys	Leu	His	Asn	Gly
1				5					10					15	
Ser	Gly	Gly	Leu	Cys	Cys	Lys	Ser	Cys	Ser	Arg	Gln	Asp	Lys	Lys	Leu
			20					25					30		
Asn	Thr	Tyr	Asp	Trp	Leu	Ala	Asp	Ile	Pro	Gly	Asn	Ala	Glu	Glu	Ser
		35					40					45			
Asp	Met	Val	Glu	Val	Gln	Phe	Lys	Asn	Thr	Arg	Lys	Gly	Tyr	Tyr	Arg
	50					55					60				
Asn	Ser	Asn	Lys	Ile	Lys	Leu	Glu	Lys	Gly	Asp	Ile	Val	Ala	Val	Glu
65					70					75					80
Ala	Thr	Pro	Gly	His	Asp	Ile	Gly	Thr	Val	Thr	Leu	Thr	Gly	Arg	Leu
				85					90					95	
Val	Pro	Leu	Gln	Met	Lys	Lys	Ala	Asn	Phe	Lys	Gln	Asp	Ala	Glu	Ile
			100					105					110		
Lys	Arg	Ile	Tyr	Arg	Lys	Ala	Lys	Ala	Val	Asp	Met	Glu	Lys	Tyr	Glu
		115					120					125			
Glu	Ala	Lys	Ala	Lys	Glu	His	Thr	Thr	Met	Ile	Arg	Ala	Arg	Gln	Ile
	130					135					140				
Ala	Ala	Ser	Leu	Asn	Leu	Asp	Met	Lys	Ile	Gly	Asp	Val	Glu	Tyr	Gln
145					150					155					160
Gly	Asp	Gly	Asn	Lys	Ala	Ile	Phe	Tyr	Tyr	Ile	Ala	Asp	Glu	Arg	Val
			165					170						175	
Asp	Phe	Arg	Gln	Leu	Ile	Lys	Val	Leu	Ala	Glu	Ala	Phe	Arg	Val	Arg
			180					185					190		
Ile	Glu	Met	Lys	Gln	Ile	Gly	Ala	Arg	Gln	Glu	Ala	Gly	Arg	Ile	Gly
	195					200						205			
Gly	Ile	Gly	Pro	Cys	Gly	Arg	Glu	Leu	Cys	Cys	Ala	Thr	Trp	Met	Thr
	210					215					220				
Ser	Phe	Val	Ser	Val	Ser	Thr	Ser	Ala	Ala	Arg	Tyr	Gln	Asp	Ile	Ser
225					230					235					240
Leu	Asn	Pro	Gln	Lys	Leu	Ala	Gly	Gln	Cys	Ala	Lys	Leu	Lys	Cys	Cys
			245					250						255	
Leu	Asn	Tyr	Glu	Val	Asp	Cys	Tyr	Val	Glu	Ala	Gln	Lys	Arg	Leu	Pro
		260						265					270		
Ser	Arg	Glu	Ile	Glu	Leu	Glu	Thr	Lys	Asp	Gly	Thr	Tyr	Tyr	Phe	Phe
	275						280					285			
Lys	Ala	Asp	Ile	Leu	Ser	Asn	Gln	Ile	Ser	Tyr	Ser	Thr	Asp	Lys	Asn
	290					295					300				
Phe	Ala	Ala	Asn	Leu	Val	Thr	Ile	Ser	Gly	Lys	Arg	Ala	Phe	Glu	Val
305					310					315					320
Ile	Gly	Leu	Asn	Lys	Arg	Gly	Ile	Lys	Pro	Asp	Ser	Leu	Leu	Glu	Ala
			325						330					335	
Glu	Arg	Lys	Pro	Glu	Pro	Lys	Lys	Pro	Val	Asp	Leu	Leu	Glu	Gln	Glu
		340						345					350		
Ser	Leu	Thr	Arg	Phe	Asp	Arg	Asp	Arg	Arg	Arg	Asn	Ala	Lys	Asp	Gly
	355						360					365			
Asn	Gly	Lys	Asp	Glu	Gly	Gly	Asn	Gly	Asn	Arg	Lys	Lys	Lys	Lys	Lys
	370					375					380				
Asn	Asn	Asn	Arg	Pro	Gln	Gln	Ala	Ala	Asn	Gly	Glu	Thr	Gln	Ser	Ser
385					390					395					400
Gln	Pro	Thr	Pro	Ile	Asn	Ala	Gln	Glu	Asn	Asn	Gly	Ser	Gln	Pro	Val
			405						410					415	
Gln	Asn	Gln	Gln	Arg	Thr	Arg	Gly	Glu	Arg	Pro	Lys	Asn	Asn	Asn	Arg

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Asn	Asn	Asn	Gln	Pro	Arg	Lys	Asn	Asn	Glu	Ser	Arg	Glu	Pro	Arg	Ser
		435					440					445			
Asn	Glu	Asn	Arg	Glu	Thr	Arg	Lys	Asn	Glu	Pro	Arg	Glu	Gln	Arg	Pro
		450					455					460			
Pro	Arg	Glu	Pro	Arg	Gly	Pro	Arg	Asn	Asn	Glu	Gln	Pro	Lys	Arg	Ile
465					470					475					480
Glu	Lys	Ala	Gln	Glu	Asn	Glu	Lys	Pro	Ala	Gln	Glu				
			485						490						

<210> 9502

<211> 370

<212> PRT

<213> B.fragilis

<400> 9502

Ala	Met	Phe	Phe	Arg	Asp	Val	Ile	Gly	Gln	Glu	Glu	Ala	Lys	Tyr	Arg
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Leu	Ile	Gln	Glu	Val	Ser	Glu	Gly	Arg	Ile	Pro	His	Ala	Gln	Leu	Phe
		20						25					30		
Cys	Gly	Pro	Glu	Gly	Val	Gly	Lys	Phe	Pro	Leu	Ala	Leu	Ala	Tyr	Ala
		35					40					45			
Arg	Tyr	Leu	Ser	Cys	Thr	Asn	Arg	Ser	Asp	Thr	Asp	Ala	Cys	Gly	Val
	50					55					60				
Cys	Pro	Ser	Cys	Val	Lys	Phe	Asn	Lys	Leu	Val	His	Pro	Asp	Val	His
65				70						75					80
Phe	Val	Phe	Pro	Val	Val	Lys	Asn	Gly	Arg	Ser	Asp	Asp	Tyr	Ile	Val
				85					90					95	
Glu	Trp	Arg	Lys	Leu	Val	Leu	Asn	Asn	Pro	Tyr	Phe	Thr	Ile	Asn	His
			100					105					110		
Trp	Leu	Asn	Glu	Ile	Asn	Ala	Glu	Asn	Ala	Gln	Ala	Val	Ile	Tyr	Thr
		115					120					125			
Lys	Glu	Ser	Asp	Glu	Ile	Met	Lys	Lys	Leu	Ser	Leu	Lys	Ser	Ser	Glu
	130					135					140				
Gly	Gly	Phe	Lys	Ile	Thr	Leu	Leu	Trp	Leu	Pro	Glu	Lys	Met	Gln	Gln
145					150					155					160
Ala	Cys	Ala	Asn	Lys	Leu	Leu	Lys	Leu	Leu	Glu	Glu	Pro	Pro	Glu	Lys
				165					170					175	
Thr	Ile	Phe	Leu	Leu	Val	Ser	Glu	Ala	Pro	Asp	Leu	Ile	Leu	Gln	Thr
		180						185					190		
Ile	Leu	Ser	Arg	Thr	Gln	Arg	Phe	Asn	Leu	Arg	Lys	Ile	Glu	Glu	Glu
		195					200					205			
Cys	Met	Ala	Glu	Ala	Leu	Gln	Ser	Lys	Tyr	Gly	Val	Gln	Gln	Ala	Thr
	210					215					220				
Ser	Ile	Ser	Ile	Ala	His	Leu	Ala	Asn	Gly	Asn	Phe	Ile	Lys	Ala	Leu
225					230					235					240
Glu	Thr	Ile	His	Leu	Asn	Glu	Glu	Asn	Gln	Leu	Phe	Phe	Glu	Leu	Phe
				245					250					255	
Val	Ser	Leu	Met	Arg	Leu	Ser	Tyr	Gln	Arg	Lys	Ile	Arg	Glu	Met	Lys
			260					265					270		
Leu	Trp	Ser	Glu	Gln	Val	Ala	Gly	Met	Gly	Arg	Glu	Arg	Gln	Lys	Asn
		275					280						285		
Phe	Leu	Glu	Tyr	Cys	Gln	Arg	Met	Ile	Arg	Glu	Asn	Phe	Ile	Tyr	Asn
	290					295					300				
Leu	His	Arg	Lys	Glu	Leu	Thr	Tyr	Met	Thr	Leu	Glu	Glu	Gln	Asn	Phe
305					310					315					320
Ala	Thr	Arg	Phe	Ala	Pro	Phe	Val	Asn	Glu	Arg	Asn	Val	Met	Gly	Ile
				325					330					335	
Met	Asp	Glu	Leu	Ser	Glu	Ala	Gln	Lys	His	Ile	Glu	Gln	Asn	Val	Asn

	340		345		350
Ala Lys Met Val Phe Phe Asp Phe Ser Leu Lys Met Ile Val Leu Leu					
	355		360		365
Lys Gln					
370					

<210> 9503
 <211> 97
 <212> PRT
 <213> B.fragilis

<400> 9503
 Ser Gln Gly Ser Ser Ser Gly Ile Ala Gly Ala Gly Asp Phe Val Ala
 1 5 10 15
 Pro Gly Pro Leu Phe Arg Gly Gly Thr Val Gly Lys Ile Ala Val Gly
 20 25 30
 Ser Lys Val Val Arg Lys Ala Val Pro Leu Arg Gly Asp Asp Leu Thr
 35 40 45
 Gly Arg Pro Val Val Thr Gly Asp Leu Asn Arg Ile Ile Val Pro Pro
 50 55 60
 Pro Gly Gly Ser Leu Pro Phe Phe Ala Gly Pro Tyr Ala Leu Gln Gly
 65 70 75 80
 Asn Gly Val Leu Val Phe Arg Val Met His Pro Ile Tyr Gln Phe Arg
 85 90 95
 Ser

<210> 9504
 <211> 828
 <212> PRT
 <213> B.fragilis

<400> 9504
 Val Ala Arg Ser Phe Gln Pro Arg Gly Glu Asp Glu Arg Leu Gly Ile
 1 5 10 15
 Pro Ala Phe Lys Leu Ala Asp Gly Pro Leu Gly Val Ala Ser Trp Gly
 20 25 30
 Leu Phe Gly Arg Ala Thr Ala Phe Pro Ser Ala Leu Ser Leu Ala Ala
 35 40 45
 Ser Trp Asn Lys Asn Leu Ala Glu Lys Thr Gly Ala Met Tyr Ala Gln
 50 55 60
 Glu Trp Arg Ala Arg Gly Ile His Phe Leu Leu Ala Pro Gly Val Asn
 65 70 75 80
 Asn Tyr Arg Ala Ser Lys Gly Ala Arg Asn Phe Glu Tyr Phe Gly Glu
 85 90 95
 Asp Pro Tyr Leu Ala Ser Glu Met Val Val Pro Phe Ile Lys Ala Val
 100 105 110
 Gln Asp Gly Gly Val Ile Ala Thr Ile Lys His Phe Ala Ala Asn Asp
 115 120 125
 Gln Glu Phe Asp Arg Tyr Thr Val Ser Thr Glu Val Ser Glu Arg Ala
 130 135 140
 Leu Gln Glu Ile Tyr Leu Pro Pro Phe Lys Ala Ala Val Gln Lys Ala
 145 150 155 160
 Gly Val Lys Ala Val Met Thr Gly Tyr Asn Leu Val Asn Gly Val Tyr
 165 170 175
 Cys Thr Glu Asn Lys His Leu Ile Asp Ile Leu Lys Lys Asp Trp Gly
 180 185 190
 Phe Lys Gly Met Leu Met Ser Asp Trp Ala Cys Thr Tyr Ser Ala Glu
 195 200 205

Asn	Ala	Ala	Asn	Tyr	Gly	Leu	Asp	Leu	Glu	Met	Gly	Ser	Asn	Asp	Trp
210						215					220				
Phe	Thr	Arg	Lys	Glu	Leu	Leu	Pro	Leu	Val	Lys	Glu	Gly	Lys	Val	Thr
225						230					235				240
Glu	Glu	Val	Ile	Asn	Asp	Lys	Val	Arg	Arg	Ile	Tyr	Gly	Ala	Cys	Ile
				245							250				255
Ser	Met	Gly	Phe	Phe	Asp	Arg	Pro	Gln	Gln	Asp	Thr	Asp	Ile	Pro	Thr
			260							265				270	
Phe	Asn	Pro	Gln	Ala	Asn	Gln	Met	Ala	Leu	Asn	Thr	Ala	Cys	Glu	Gly
		275						280					285		
Ile	Ile	Leu	Leu	Lys	Asn	Glu	Gln	Asn	Thr	Leu	Pro	Ile	His	Arg	Pro
		290						295				300			
Lys	Val	Ile	Ala	Val	Ile	Gly	Pro	Thr	Ala	Asn	Pro	Ala	Ile	Val	Ser
305						310					315				320
Asp	Arg	Ile	Tyr	Asn	Val	Asn	Ser	Ile	Val	Tyr	Gly	Gly	Gly	Gly	Ser
				325							330				335
Ser	Lys	Val	His	Pro	Trp	Tyr	Val	Val	Ser	Ala	Leu	Glu	Gly	Ile	Arg
			340							345				350	
Gln	Glu	Phe	Pro	Glu	Ala	Thr	Val	Leu	Tyr	Thr	Glu	Gly	Ile	Ser	Asn
		355						360					365		
Gln	Phe	Lys	Pro	Arg	Leu	Phe	Arg	Asn	Ser	Lys	Phe	Arg	Thr	Lys	Glu
		370						375					380		
Ser	Lys	Pro	Gly	Leu	Glu	Ala	Ser	Tyr	Tyr	Ala	Leu	Ser	Ser	Asp	Thr
385						390					395				400
Ser	Ala	Thr	Leu	Ser	Asp	Lys	Met	Ile	Gln	Gln	Ala	Val	Ala	Ala	
				405							410				415
Gly	Arg	Thr	Val	Ser	Val	Asn	Gln	Ser	Ala	Asp	Arg	Thr	Val	Glu	Thr
			420										430		
Asp	Lys	Glu	Glu	Ser	Gly	Leu	Ile	Leu	Arg	Arg	Thr	Asp	Arg	Thr	Val
			435										445		
Asn	Tyr	Glu	Trp	Trp	Gly	Tyr	Pro	Phe	Asn	Glu	Ser	Lys	Leu	Gly	Asn
			450										460		
Asp	Tyr	Arg	Val	Cys	Trp	Glu	Gly	Tyr	Val	Asp	Val	Glu	Lys	Thr	Asp
465						470									480
Ser	Ile	Arg	Phe	Phe	Val	Asp	Ala	Gln	Gly	Ala	Tyr	Arg	Leu	Trp	Ile
				485											495
Asp	Gly	Thr	Leu	Ala	Leu	Asp	Ala	Ser	Gln	Ser	Gln	Ser	Phe	Asp	Val
			500											510	
Arg	Asn	Thr	Ala	Ile	Ser	Ala	Lys	Lys	Gly	Asp	Ala	Lys	His	Ile	Arg
			515											525	
Leu	Glu	Phe	Cys	Asn	Gln	Arg	Ser	Thr	Pro	Ala	Glu	Ile	Arg	Met	Gly
			530												540
Tyr	Ala	Tyr	Gln	Ser	Asp	Ile	Asp	Phe	Ser	Glu	Ala	Lys	Arg	Leu	Ala
545						550									560
Ala	Lys	Ala	Asp	Leu	Val	Val	Phe	Cys	Ala	Gly	Leu	Asp	Gly	Ser	Ile
				565											575
Glu	Leu	Glu	Gly	Arg	Asp	Arg	Pro	Phe	Asp	Leu	Pro	Tyr	Gly	Gln	Asp
			580												590
Met	Leu	Ile	Gln	Glu	Leu	Val	Lys	Val	Asn	Pro	Lys	Leu	Ile	Val	Ala
			595												605
Ile	His	Ala	Gly	Gly	Gly	Ile	Asn	Met	Thr	Arg	Trp	Ile	Asp	Gln	Val
		610													620
Pro	Ala	Val	Val	His	Ala	Leu	Tyr	Pro	Gly	Gln	Glu	Gly	Gly	His	Ala
625						630									640
Leu	Ala	His	Ile	Leu	Ser	Gly	Lys	Val	Asn	Pro	Ser	Ala	Lys	Leu	Pro
				645											655
Phe	Thr	Ile	Glu	Lys	Arg	Trp	Glu	Asp	Ser	Pro	Ala	Cys	Gly	His	Tyr
			660												670
Asp	Glu	Thr	Arg	Lys	Glu	Lys	Lys	Val	Tyr	Tyr	Thr	Glu	Gly	Ile	Phe

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675 680 685
 Thr Gly Tyr Arg Gly Tyr Asp Gln Lys Gly Ile Glu Pro Leu Phe Pro
 690 695 700
 Phe Gly Phe Gly Leu Ser Tyr Thr Thr Phe Asp Tyr Ser Gly Leu Asn
 705 710 715 720
 Ile Arg Met Thr Asp Lys Lys Gln Lys Gln Leu Val Val Ser Phe Thr
 725 730 735
 Val Thr Asn Thr Gly Gln Arg Asp Gly Tyr Glu Val Ala Gln Leu Tyr
 740 745 750
 Val Arg Asp Met Gln Ser Lys Glu Pro Arg Pro Leu Lys Glu Leu Lys
 755 760 765
 Gly Phe Asp Lys Val Tyr Leu Lys Ala Gly Glu Ser Lys Gln Ile Glu
 770 775 780
 Ile Gly Leu Ser Glu Asp Ala Phe Gln Tyr Phe Asn Ala Lys Gln Ser
 785 790 795 800
 Arg Trp Val Phe Glu Lys Gly Glu Phe Glu Ile Leu Val Gly Ala Ser
 805 810 815
 Ser Lys Asp Ile Arg Leu Ala Glu Lys Ile Lys Met
 820 825

<210> 9505

<211> 325

<212> PRT

<213> B.fragilis

<400> 9505

Ile Glu Lys Pro Ile Lys Lys Met Asp Tyr Ile Ser Phe Leu Ser Leu
 1 5 10 15
 Tyr Leu Trp Arg Glu Pro Met Asn Leu Ile Ser Met Ala Lys Gln Lys
 20 25 30
 Asp Gly Phe Leu Gly Glu Gln Ala Leu Val Leu Pro Pro Ala Ile Val
 35 40 45
 Gln Arg Met Lys Thr Asp Pro Ala Thr Ser Ile Leu Tyr Ile Thr Asp
 50 55 60
 Ile Gly Tyr Tyr Pro Lys Ala Tyr Asn His Phe Arg Glu Arg Asp Thr
 65 70 75 80
 Pro Ile Asp Gln Tyr Val Phe Ile Tyr Cys Thr Glu Gly Arg Gly Trp
 85 90 95
 Phe Ser Leu Asp Gly Gln Lys His Pro Val Val Pro Asn Gln Tyr Phe
 100 105 110
 Ile Leu Pro Ala Gly Leu Pro His Ala Tyr Gly Ala Asp Glu Lys Glu
 115 120 125
 Pro Trp Thr Ile Tyr Trp Ile His Phe Gly Gly Thr Leu Ala Pro Leu
 130 135 140
 Tyr Cys Thr His Arg Thr Cys Arg Leu Thr Asp Ile Lys Pro Gly Met
 145 150 155 160
 His Ser Arg Ile Ser Tyr Arg Thr Glu Leu Phe Glu Glu Ile Phe Arg
 165 170 175
 Val Leu Lys Met Gly Tyr Ser Leu Glu Asn Leu Ser Tyr Ala Ser Ser
 180 185 190
 Val Phe His His Tyr Leu Gly Ser Leu Arg Tyr Leu Arg Glu Tyr Arg
 195 200 205
 Glu Ala Phe Ser Glu His Arg Pro Ala Gly Glu Glu Asp Pro Val Asn
 210 215 220
 Ala Ala Ile His Tyr Met Lys Glu Asn Leu Gly Lys Lys Leu Thr Leu
 225 230 235 240
 Ala Glu Leu Ala Asp Tyr Thr Gly Tyr Ser Ser Ser Tyr Phe Ser Asn
 245 250 255
 Leu Phe Leu Lys Arg Thr Gly Tyr Ala Pro Leu Ser Tyr Phe Asn Gln


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<210> 9506
<211> 348
<212> PRT
<213> B.fragilis
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Arg 1	Ser	Leu	Tyr	Gly 5	Asp	Cys	Tyr	Ser	His 10	Cys	Ile	Tyr	Asn	Ser 15	Thr
Ser	Leu	Lys	Val 20	Glu	His	Tyr	Lys	Leu 25	Ile	Phe	Phe	Asn 30	Ile	Met	Lys
Ile	Lys	Leu 35	Leu	Leu	Leu	Leu	Cys 40	Cys	Gly	Leu	Trp	Ser 45	Ser	Cys	Asn
Ser	Tyr 50	Asp	Tyr	Cys	Pro	Val 55	Thr	Pro	Ser	Glu	Ser	Asp 60	Leu	Val	Phe
Thr 65	Gly	Leu	Ala	Arg 70	Ser	Trp	Asp	Glu	Ala 75	Met	Pro	Leu	Gly	Asn 80	Ala
Thr	Val	Gly	Ala 85	Leu	Val	Trp	Gln	Arg	Asp 90	Ser	Thr	Leu	Arg 95	Leu	Ser
Leu	Asp	Arg 100	Thr	Asp	Leu	Trp	Asp 105	Leu	Arg	Pro	Val	Asp 110	Ser	Leu	Ser
Gly	Asp	Asn 115	Phe	Arg	Phe	Ser	Trp 120	Val	Lys	Glu	His	Ile 125	Arg	Gln	Lys
Asn	Tyr 130	Leu	Pro	Val	Gln	Lys 135	Lys	Leu	Asp	Trp	Pro 140	Tyr	Asp	Met	Asn
Pro 145	Ala	Pro	Ser	Lys 150	Ile	Pro	Gly	Ala	Ala 155	Ile	Glu	Phe	Pro	Leu 160	Glu
Gln	Ile	Gly	Thr 165	Pro	Thr	Gln	Val	Arg	Leu 170	Tyr	Leu	Asn 175	Asn	Ala 175	Leu
Cys	Glu	Ala	Asp 180	Trp	Ala	Asp	Gly	Thr 185	Gln	Met	Gln	Thr 190	Phe	Val	His
Ala	Thr 195	Glu	Pro	Ile	Gly	Trp	Phe 200	Val	Phe	Arg	Asn 205	Leu	Lys	Thr	Pro
Ile	Glu 210	Pro	Ser	Ile	Ile	Thr 215	Pro	Val	Tyr	Asn	Lys 220	Thr	Lys	Pro	Asp
Gly 225	Ser	Leu	Asp	Pro 230	Val	Ser	Gly	Gln	Asp	Leu 235	His	Arg	Leu	Gly 240	Tyr
Gln	Gln	Gly	Lys 245	Val	Val	Arg	Glu	Gly	Asn 250	Gln	Ile	Thr	Tyr 255	His	Gln
Lys	Gly	Tyr	Gly 260	Asp	Phe	Ser	Tyr	Asp 265	Val	Thr	Val	Cys 270	Trp	Lys	Gln
Glu	Gly 275	Glu	Thr	Leu	Tyr	Gly	Thr 280	Trp	Ser	Val	Thr	Ser 285	Ser	Leu	Ser
Gly	Glu 290	Gln	Ala	Ser	Glu	Lys 295	Ala	Glu	Ala	Ala 300	Leu	Gln	Arg	Gly	Val
Lys 305	His	Asp	Tyr	Gln 310	Ala	Pro	Leu	Glu	Tyr	Trp 315	Asp	Arg	Tyr	Trp	Ala
Gln	Ser	Cys	Ile 325	Thr	Leu	Pro	Asp	Ala 330	Asp	Trp	Lys	Asn 335	Arg	Leu	Arg
Pro	Lys	Leu	Ile	Asn	Arg	Val	His	Tyr	Pro	Glu	His				

340

345

<210> 9507
 <211> 482
 <212> PRT
 <213> B.fragilis

<400> 9507

Ser	Val	Ser	Leu	Phe	Ile	Ser	Ile	Leu	Lys	Pro	Ala	Tyr	Phe	Ala	Ile
1			5					10					15		
Ser	Ile	Lys	Pro	Phe	Asn	Asn	Met	Lys	Gln	Thr	Arg	Gly	Tyr	Leu	Leu
		20					25					30			
Leu	Ile	Cys	Ile	Val	Ser	Ala	Met	Gly	Gly	Leu	Leu	Phe	Gly	Tyr	Asp
		35					40					45			
Trp	Val	Val	Ile	Gly	Gly	Ala	Lys	Ile	Phe	Tyr	Glu	Pro	Phe	Phe	Gly
	50					55					60				
Ile	Glu	Asn	Ser	Ala	Ala	Leu	Arg	Gly	Trp	Ala	Met	Ser	Ser	Ala	Leu
65					70					75					80
Ile	Gly	Cys	Leu	Ala	Gly	Ala	Leu	Leu	Ser	Gly	Ile	Trp	Ser	Asp	Lys
			85						90					95	
Tyr	Gly	Arg	Lys	Lys	Met	Leu	Val	Ile	Ala	Ser	Phe	Leu	Phe	Ala	Leu
			100					105					110		
Ser	Ala	Trp	Gly	Thr	Gly	Ala	Val	Asp	His	Phe	Ser	Tyr	Phe	Ile	Phe
		115					120					125			
Tyr	Arg	Ile	Val	Gly	Gly	Leu	Gly	Ile	Gly	Ile	Ala	Ser	Asn	Ile	Ser
	130					135					140				
Pro	Val	Tyr	Ile	Ala	Glu	Val	Ser	Pro	Ala	His	Val	Arg	Gly	Lys	Phe
145					150					155					160
Val	Ser	Leu	Asn	Gln	Leu	Thr	Ile	Val	Leu	Gly	Ile	Leu	Leu	Ala	Gln
			165						170					175	
Leu	Ala	Asn	Trp	Gln	Ile	Gly	Glu	Tyr	Tyr	Thr	Gln	Gly	Ser	Asp	Ile
			180					185					190		
Leu	Ser	Glu	Thr	Ser	Val	Gln	Trp	Ala	Trp	Arg	Trp	Met	Phe	Trp	Ala
		195					200					205			
Glu	Leu	Ile	Pro	Ala	Gly	Ile	Phe	Phe	Leu	Leu	Ser	Phe	Ile	Ile	Pro
	210					215					220				
Glu	Ser	Pro	Arg	Trp	Leu	Ala	Thr	Val	His	Gln	Gln	Glu	Lys	Ala	Gln
225					230					235					240
Lys	Thr	Leu	Thr	Arg	Ile	Gly	Gly	Glu	Thr	Tyr	Ala	Arg	Gln	Thr	Leu
			245						250					255	
Glu	Glu	Leu	Asn	Gln	Leu	Thr	Gln	Ser	Gln	Gly	Asn	Arg	Gln	Asn	Asn
		260					265						270		
Glu	Trp	Lys	Ser	Val	Phe	Arg	Pro	Glu	Met	Arg	Lys	Val	Leu	Ile	Ile
		275					280					285			
Gly	Ile	Val	Leu	Ala	Ile	Phe	Gln	Gln	Trp	Cys	Gly	Ile	Asn	Val	Ile
	290					295					300				
Phe	Asn	Tyr	Ala	His	Glu	Ile	Phe	Ser	Ser	Ala	Gly	Tyr	Ala	Val	Ser
305					310					315					320
Asp	Val	Leu	Met	Asn	Ile	Val	Val	Thr	Gly	Ile	Thr	Asn	Val	Ile	Phe
			325						330					335	
Thr	Phe	Val	Ala	Ile	Tyr	Thr	Val	Asp	Lys	Trp	Gly	Arg	Arg	Thr	Leu
		340					345					350			
Met	Leu	Ile	Gly	Ser	Ala	Gly	Leu	Ala	Leu	Ile	Tyr	Leu	Ile	Leu	Gly
		355					360					365			
Thr	Cys	Tyr	Phe	Leu	Asp	Val	Asn	Gly	Leu	Pro	Met	Leu	Leu	Leu	Val
	370					375					380				
Val	Leu	Ala	Ile	Ala	Cys	Tyr	Ala	Met	Ser	Leu	Ala	Pro	Val	Val	Trp
385					390					395					400
Val	Val	Leu	Ser	Glu	Ile	Phe	Pro	Val	Lys	Ile	Arg	Gly	Met	Ala	Ile

				405				410					415			
Ala	Ile	Ser	Thr	Phe	Phe	Leu	Trp	Val	Ala	Cys	Phe	Ile	Leu	Thr	Tyr	
				420				425					430			
Thr	Phe	Pro	Val	Leu	Asn	Glu	Ser	Ile	Gly	Ala	Glu	Gly	Thr	Phe	Trp	
		435					440					445				
Leu	Tyr	Gly	Gly	Ile	Cys	Leu	Ala	Gly	Phe	Leu	Phe	Ile	Arg	Gln	Asn	
	450					455					460					
Leu	Pro	Glu	Thr	Lys	Gly	Lys	Thr	Leu	Glu	Glu	Ile	Glu	Lys	Glu	Leu	
465					470					475					480	
Ile	Lys															

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<212> PRT

<213> B.fragilis

<400> 9508

Asn	Lys	Met	Lys	Glu	Ser	Val	Asn	Val	Trp	Glu	Glu	Asp	Ile	Leu	Leu	
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Pro	Thr	Tyr	Gly	Ile	Gly	Arg	Pro	Glu	Lys	Asn	Pro	Met	Phe	Leu	Glu	
			20					25					30			
Lys	Arg	Val	Tyr	Gln	Gly	Ser	Ser	Gly	Ala	Val	Tyr	Pro	Tyr	Pro	Val	
		35					40					45				
Ile	Glu	Lys	Ile	Glu	Asp	Thr	Cys	Glu	Glu	Lys	Ser	Tyr	His	Ala	Val	
	50					55					60					
Trp	Leu	Glu	Asn	Glu	Tyr	Ile	Lys	Val	Met	Ile	Leu	Pro	Glu	Leu	Gly	
65					70				75						80	
Gly	Arg	Ile	Gln	Met	Ala	Phe	Asp	Lys	Val	Lys	Gln	Arg	His	Phe	Ile	
				85					90					95		
Tyr	Tyr	Asn	His	Val	Ile	Lys	Pro	Ala	Leu	Val	Gly	Leu	Thr	Gly	Pro	
			100					105						110		
Trp	Ile	Ser	Gly	Gly	Ile	Glu	Phe	Asn	Trp	Pro	Gln	His	His	Arg	Pro	
		115					120					125				
Ser	Thr	Phe	Leu	Pro	Val	Asp	Tyr	Ser	Ile	Glu	Arg	Cys	Lys	Asp	Gly	
	130					135					140					
Ser	Val	Val	Val	Trp	Val	Ser	Glu	Arg	Glu	Arg	Met	Phe	Gly	Gln	Lys	
145					150					155					160	
Gly	Thr	Ala	Gly	Phe	Thr	Leu	Arg	Pro	Gly	Arg	Ala	Val	Leu	Glu	Ile	
				165					170					175		
Gln	Gly	Lys	Val	Ser	Asn	Pro	Thr	Pro	Leu	Pro	Gln	Thr	Phe	Leu	Trp	
			180					185					190			
Trp	Ala	Asn	Pro	Ala	Val	Ala	Val	Asn	Asp	Cys	Tyr	Gln	Ser	Val	Phe	
		195					200					205				
Pro	Ser	Asp	Val	Asn	Ala	Val	Phe	Asp	His	Gly	Lys	Arg	Asp	Val	Ser	
	210					215						220				
Arg	Tyr	Pro	Ile	Ala	Thr	Gly	Thr	Tyr	Tyr	Lys	Met	Asp	Tyr	Ser	Ala	
225					230					235					240	
Gly	Val	Asp	Ile	Ser	Arg	Tyr	Lys	Asn	Ile	Pro	Val	Pro	Thr	Ser	Tyr	
				245					250					255		
Met	Ala	Ile	Arg	Ser	Asn	Tyr	Asn	Phe	Val	Gly	Gly	Tyr	Glu	Asn	Asp	
		260						265					270			
Thr	Gln	Ala	Gly	Val	Leu	His	Val	Ala	Asn	His	His	Ile	Ser	Pro	Gly	
		275					280					285				
Lys	Lys	Gln	Trp	Thr	Trp	Gly	Asn	Gly	Asp	Phe	Gly	Gln	Ala	Trp	Asp	
	290					295					300					
Arg	Asn	Leu	Thr	Asp	Ala	Asp	Gly	Pro	Tyr	Ile	Glu	Leu	Met	Thr	Gly	
305					310					315					320	
Val	Tyr	Thr	Asp	Asn	Gln	Pro	Asp	Phe	Ser	Trp	Leu	Gln	Pro	Tyr	Glu	

[illegible]

Phe Asn Lys Met Asn Arg Pro Asp Ala Ala Val Ala Leu Leu Glu Lys
 805 810 815
 Ala Phe Arg Leu Asp His Thr Asp Ala Arg Val Leu Met Glu Leu Asp
 820 825 830
 Gln Leu Tyr Lys Arg Leu Asn Arg Pro His Ile Glu Arg Leu Cys Phe
 835 840 845
 Leu Glu Gln His Ile Asp Ile Val Met Thr Arg Asp Asp Leu Tyr Leu
 850 855 860
 Glu Tyr Val Thr Leu Leu Asn Gln Thr Gly Gln Tyr Arg Glu Ala Ile
 865 870 875 880
 Arg Arg Ile Asp Gln Arg Lys Phe His Pro Trp Glu Gly Gly Glu Gly
 885 890 895
 Lys Val Pro Ala Gln Tyr Gln Leu Ala Arg Leu Glu Leu Ala Lys Glu
 900 905 910
 Leu Ile Asn Arg Lys Lys Tyr Asp Asp Ala Leu Ala Leu Ile Asp Glu
 915 920 925
 Cys Tyr Ile Tyr Pro Ala His Leu Gly Glu Gly Lys Leu Pro Gly Ala
 930 935 940
 Gln Glu Asn Asp Phe Asn Tyr Tyr Lys Ala Tyr Ile Leu Gln Gln Gln
 945 950 955 960
 Gly Arg Pro Glu Glu Ala His Ser Leu Phe Val Lys Ala Cys Ser Gly
 965 970 975
 Asn Ser Gln Pro Ala Ala Ala Met Tyr Tyr Asn Asp Gln Lys Pro Asp
 980 985 990
 Lys Ile Phe Tyr Gln Gly Leu Ala Tyr Arg Lys Leu Gly Glu Glu Glu
 995 1000 1005
 Lys Ala Arg Ser Arg Phe Asn Gln Leu Ile Thr Tyr Gly Glu Glu His
 1010 1015 1020
 Leu Phe Asp Arg Phe Lys Met Asp Tyr Phe Ala Val Ser Leu Pro Asp
 1025 1030 1035 1040
 Leu Leu Ile Trp Glu Asp Asp Met Asp Lys Lys Asn Arg Ile His Cys
 1045 1050 1055
 Asn Tyr Leu Met Ala Leu Gly His Leu Gly Leu Gly Asn Arg Thr Lys
 1060 1065 1070
 Thr Glu His Phe Phe Asp Ile Ala Ala Ser Met Asp Asn Asn His Gln
 1075 1080 1085
 Gly Val Gln Ile His Arg Lys Leu Met Asn Thr Ile Leu Ser
 1090 1095 1100

<210> 9509

<211> 940

<212> PRT

<213> B.fragilis

<400> 9509

Gln Ser Ser Arg Ser Thr Asn Ser Pro Glu Ile Asn Glu Tyr His Ser
 1 5 10 15
 Ile Met Lys Gln Ser Phe Gln Asn Thr Arg Tyr Arg Ala Ile Leu Leu
 20 25 30
 Leu Thr Gly Leu Met Leu Ala Met Thr Ala Met Ala Gln Thr Leu Thr
 35 40 45
 Asn Asp Ala Leu Asp Leu Ser Gly Met Trp Arg Phe Gln Leu Asp Pro
 50 55 60
 Met Gly Phe Gly Lys Thr Pro Gly Ser Glu Leu Tyr Leu Asp Lys Leu
 65 70 75 80
 Ser Glu Thr Ile Met Leu Pro Gly Ser Thr Asp Gln Gly Gly Lys Gly
 85 90 95
 Ile Lys Asn Thr Ala Arg Tyr Val Asp Arg Leu Ser Arg Lys Phe Glu
 100 105 110

Tyr	Gln	Gly	Ala	Ala	Trp	Tyr	Gln	Arg	Glu	Val	Val	Ile	Pro	Glu	Asp
		115					120					125			
Trp	Ala	Asp	Arg	Glu	Ile	Tyr	Leu	Lys	Leu	Glu	Arg	Cys	His	Trp	Glu
		130					135					140			
Thr	Thr	Val	Tyr	Val	Asp	Asp	Lys	Glu	Ala	Gly	Met	Lys	Glu	His	Leu
					150					155					160
Ser	Thr	Pro	Asn	Thr	Phe	Val	Leu	Thr	Pro	Leu	Leu	Thr	Pro	Gly	Ile
				165					170					175	
His	Thr	Leu	Thr	Ile	Cys	Val	Asn	Asn	Thr	Leu	Lys	Tyr	Pro	Met	Asp
			180					185					190		
Gln	Trp	Asn	His	Gly	Thr	Thr	Glu	Tyr	Thr	Gln	Thr	Asn	Trp	Asn	Gly
		195					200					205			
Ile	Ala	Gly	Asp	Ile	Leu	Leu	Tyr	Ala	Lys	Glu	Lys	Ala	His	Ile	Arg
		210					215				220				
Gln	Ile	Asn	Val	Tyr	Pro	Asp	Val	Ser	Ser	Lys	Ala	Val	Glu	Val	Ser
		225				230				235					240
Val	Gln	Pro	Ala	Pro	Leu	Lys	Thr	Gly	Gln	Thr	Gly	Lys	Leu	Glu	Leu
				245					250					255	
Cys	Ile	Arg	Glu	Gln	Gly	Gly	Lys	Ile	Ile	Ala	Arg	Gln	Thr	Leu	Asn
			260				265						270		
Ala	Asp	Ser	Leu	Gln	Val	His	Ala	Gly	Ile	Arg	Gln	Thr	Leu	Pro	Met
		275					280					285			
Gly	Asn	Arg	Val	Lys	Leu	Trp	Asp	Glu	Phe	Thr	Pro	Tyr	Leu	Tyr	Glu
		290					295				300				
Ile	Glu	Ala	Ser	Trp	Asn	Val	Asp	Gly	Lys	Thr	Asp	Thr	Gln	Thr	Arg
		305				310				315					320
Thr	Phe	Gly	Met	Arg	Asn	Val	Glu	Gln	Gly	Lys	His	His	Ile	Arg	Leu
				325					330					335	
Asn	Gly	Arg	Asp	Ile	His	Leu	Arg	Gly	Val	Leu	Asp	Cys	Ala	Val	Phe
			340					345					350		
Pro	Leu	Thr	Gly	Tyr	Pro	Ser	Thr	Asn	Val	Asp	Asp	Trp	Lys	Arg	Ile
			355				360					365			
Phe	Thr	Thr	Ile	Lys	Glu	Tyr	Gly	Met	Asn	His	Val	Arg	Phe	His	Ser
		370				375				380					
Trp	Cys	Ser	Pro	Glu	Ala	Ala	Phe	Glu	Ala	Gly	Asp	Glu	Val	Gly	Met
				385		390				395					400
Tyr	Leu	Gln	Ala	Glu	Leu	Pro	Met	Trp	Ile	Lys	Asp	Val	Gly	Lys	Tyr
				405				410						415	
Pro	Asp	Arg	Arg	Asp	Phe	Phe	Glu	Lys	Glu	Met	Tyr	Ala	Ile	Leu	Asp
			420				425						430		
Ala	Tyr	Gly	Asn	His	Pro	Ser	Phe	Ile	Leu	Met	Cys	Asn	Gly	Asn	Glu
			435				440					445			
Asn	Glu	Gly	Asp	Phe	Ala	Val	Leu	Glu	Asp	Leu	Val	Lys	Lys	Ala	Gln
			450				455				460				
Lys	Tyr	Asp	Asn	Arg	Arg	Leu	Tyr	Ser	Ala	Ser	Thr	Ala	Arg	Thr	His
				465		470				475					480
Thr	Pro	Ser	Asp	Gln	Tyr	Tyr	Val	Ser	His	Val	Thr	Ser	Lys	Gly	Trp
				485					490					495	
Ile	Thr	Val	Tyr	Glu	Gly	Lys	Pro	Ser	Thr	Asp	Trp	Asp	Arg	Cys	Lys
			500					505					510		
Glu	Ser	Asp	Ile	Asp	Val	Pro	Val	Ile	Ala	His	Glu	Thr	Gly	Gln	Arg
			515				520					525			
Cys	Met	Tyr	Pro	Asn	Phe	Glu	Glu	Met	Lys	Lys	Tyr	Thr	Gly	Val	Val
		530				535					540				
Glu	Ala	Arg	Asn	Phe	Glu	Val	Phe	Arg	Glu	Arg	Leu	Ala	Lys	Asn	Gly
				545		550			555						560
Met	Leu	His	Gln	Ala	Asn	Asp	Phe	Phe	Arg	Ala	Thr	Gly	Ala	His	Thr
				565				570						575	
Val	Leu	Gln	Tyr	Lys	Glu	Val	Asn	Glu	Ser	Leu	Leu	Arg	Thr	Arg	Asn

			580					585				590			
Ser	Gly	Gly	Phe	Gln	Leu	Leu	Gly	Leu	Ala	Asp	Phe	Pro	Gly	Gln	Gly
		595					600					605			
Ser	Ala	Phe	Val	Gly	Ile	Leu	Asp	Ala	Phe	Trp	Glu	Ser	Lys	Gly	Leu
	610					615					620				
Val	Thr	Pro	Glu	Lys	Phe	Arg	Glu	Ser	Cys	Ala	Pro	Thr	Val	Leu	Leu
	625				630					635				640	
Ala	Arg	Leu	Pro	Lys	Arg	Thr	Phe	Arg	Asn	Gly	Glu	Lys	Leu	Lys	Ala
			645						650					655	
Lys	Met	Glu	Ile	Tyr	His	Phe	Gly	Lys	Asp	Ala	Leu	Asn	Ser	Arg	Lys
		660						665					670		
Leu	Asn	Trp	Thr	Leu	Thr	Gly	Glu	Asp	Gly	Thr	Val	Tyr	His	Lys	Gly
	675						680					685			
Ser	Leu	Lys	Thr	Lys	Ser	Ile	Gln	Pro	Ala	Thr	Val	Asp	Ser	Leu	Gly
	690					695					700				
Ile	Ile	Glu	Leu	Pro	Leu	Asn	Gly	Met	Asp	Ser	Ala	Leu	Lys	Leu	Thr
	705				710					715				720	
Leu	Lys	Ala	Glu	Leu	Gly	Gly	Ile	His	Asn	Glu	Trp	Asp	Val	Trp	Val
			725						730					735	
Tyr	Pro	Glu	Gln	Pro	Lys	Thr	Glu	Gln	Tyr	Asn	Phe	Val	Tyr	Thr	Arg
		740						745					750		
Thr	Trp	Asn	Asp	Glu	Thr	Lys	Gln	Trp	Leu	Asn	Glu	Gly	Lys	Asn	Val
	755						760					765			
Leu	Leu	Ile	Pro	Glu	Lys	Cys	Lys	Gly	Arg	Lys	Ala	His	Phe	Ala	Ser
	770				775						780				
His	Phe	Trp	Asn	Pro	Ile	Met	Phe	Asn	Trp	Asn	Pro	Met	Ile	Val	Gly
	785				790					795				800	
Thr	Leu	Ile	Asp	Asn	Glu	His	Pro	Ala	Phe	Arg	Asp	Phe	Pro	Thr	Arg
			805						810					815	
Asn	Tyr	Ala	Asp	Trp	Gln	Trp	Trp	Asp	Ile	Leu	Asn	Tyr	Ser	Thr	Ala
		820						825					830		
Leu	Glu	Leu	Asp	Glu	Leu	Lys	Glu	Ile	Thr	Pro	Leu	Ile	Gln	Ser	Ile
	835						840					845			
Asp	Ser	Tyr	Glu	Thr	Asn	Gln	Lys	Leu	Gly	Ile	Ser	Phe	Glu	Ala	Lys
	850					855					860				
Val	Gly	Lys	Gly	Lys	Leu	Phe	Val	Leu	Cys	Ala	Asp	Pro	Glu	Lys	Lys
	865				870					875				880	
Ile	Asp	Glu	Arg	Pro	Ala	Met	Gln	Gln	Leu	Leu	Thr	Ser	Val	Arg	Asn
			885					890						895	
Tyr	Val	Ser	Ser	Gly	His	Phe	Asn	Pro	Thr	Lys	Ser	Leu	Pro	Val	Tyr
		900						905					910		
Leu	Leu	Asp	Ala	Leu	Phe	Ala	Pro	Ala	Ser	Glu	Glu	Lys	Ser	Gly	Asp
	915						920					925			
Lys	Gly	Ser	Lys	Ala	Ile	Glu	Leu	Leu	Leu	Asn	Lys				
	930					935					940				

<210> 9510

<211> 224

<212> PRT

<213> B.fragilis

<400> 9510

Lys	Lys	Tyr	Ala	Val	Arg	Leu	Leu	Leu	Leu	Gln	Lys	Lys	Asn	Tyr	Phe
1				5						10				15	
Cys	Glu	Leu	Phe	Ile	Leu	Lys	Ile	His	Arg	Met	Ser	Thr	His	Gly	Ser
			20					25					30		
Leu	Ser	Glu	Val	Glu	Arg	Phe	Asn	Leu	Leu	Tyr	Lys	Ser	Ser	Phe	Asn
		35					40					45			
Lys	Val	Cys	Asn	Phe	Ala	Cys	Phe	Tyr	Val	Arg	Asn	Lys	Gln	Ala	Ser

50	55	60
Glu Asp Ile Thr Met	Asp Ala Phe Leu Gln Leu	Leu Glu Thr Met Lys
65	70	75
Val Glu Ser Val Asp	Asn Pro Met Ala Leu Leu	Ile Thr Ile Val Lys
85	90	95
His Lys Ser Leu Asp	Tyr Leu Lys Thr Gln Val Arg Arg	Glu Asp Thr
100	105	110
Lys Asp Asp Leu Ile	Gln Trp Lys Gln Arg Glu Leu	Ala Ile Arg Ile
115	120	125
Ser Asn Leu Glu Gly	Cys Asn Pro Ser Tyr Ile Phe	Ser Gln Glu Ile
130	135	140
Lys Ser Ile Val Met	Lys Thr Leu Asn Gln Leu	Pro Glu Gln Thr Lys
145	150	155
Lys Val Phe Ile Met	Ser Arg Phe Glu Asn Lys	Ser Gly Lys Glu Ile
165	170	175
Ala Gln Thr Leu Gly	Ile Ser Val Lys Gly Val Asp	Tyr His Met Asn
180	185	190
Lys Ala Leu Lys Glu	Leu Arg Ala Ala Leu Lys	Asp Tyr Leu Pro Ile
195	200	205
Leu Thr Trp Leu Cys	Phe Met Asn Pro Ile Asn	Lys Val Trp Ile Ser
210	215	220

<210> 9511

<211> 439

<212> PRT

<213> B.fragilis

<400> 9511

Lys Leu Thr Ala Met	Pro Thr Ile Leu Glu Arg	Leu Thr Ala Leu Phe
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Ser Arg Asp Met Arg	Ala Val Leu Arg Asn	Pro Arg Ala Ile Ser Met
20	25	30
Ile Glu Asn Pro Ser	Ile Arg Val Gln Met	Ala Ala Ile Arg Arg Asp
35	40	45
Lys Ser Val Ile Cys	Phe Ile Asp Lys Pro	Val Glu Lys Val Gln Leu
50	55	60
Ala Ala Val Gly Asn	Ala Pro His Asn Ile	His Phe Ile Ala Ser Pro
65	70	75
Gly Glu Lys Val Gln	Leu Ser Val Ile Arg	His Lys Pro Gly Tyr Ile
85	90	95
Gly Phe Ile Ser Asn	Pro Thr Glu Lys Ala	Gln Leu Thr Ala Val Glu
100	105	110
Arg Arg Pro Glu Cys	Ile Ser Leu Ile Ser	Lys Pro Ala Val Lys Val
115	120	125
Gln Leu Met Ala Val	Leu Lys Asp Pro Ala	His Ile Ala Ser Ile Lys
130	135	140
Glu Pro Ala Glu Lys	Val Gln Leu Ala Ala	Val Gln Lys Asn Pro Glu
145	150	155
Tyr Ile Arg His Ile	Glu Ser Pro Thr Val	Lys Val Gln His Met Ala
165	170	175
Ile Gln Gly Asn Ala	Asp Thr Leu Arg His	Ile Lys Ser Pro Ala Asp
180	185	190
Thr Val Gln Leu Ala	Ala Val Gln Ala Lys	Gly Glu Thr Ile Arg Tyr
195	200	205
Val Ser Glu Pro Ser	Glu Ala Val Gln Leu	Ala Ala Val Arg Asn Asn
210	215	220
Pro Met Asn Ile Arg	Tyr Ile Glu Asn Pro	Thr Glu Lys Val Gln Leu
225	230	235
Ser Val Leu His Ala	Asp Arg Glu Ala Ala	Ala Leu Ile His Phe Pro

				245				250					255				
Ser	Asp	Glu	Val	Arg	Lys	Gln	Ala	Glu	Glu	Met	Tyr	Gly	Leu	Lys	Leu		
			260					265					270				
Glu	Lys	Pro	Ala	Asp	Arg	Glu	Ala	Glu	Pro	Ser	Ser	Glu	Ala	Pro	Glu		
		275					280					285					
Ser	Ser	Ala	Thr	Arg	Arg	Thr	Pro	Arg	Lys	Lys	Thr	Glu	Gln	Ser	Thr		
	290					295					300						
Gln	Ser	Thr	Arg	Lys	Pro	Ser	Ala	Arg	Gln	Val	Lys	Thr	Ala	Ile	Thr		
305					310					315					320		
Lys	Leu	Asp	Lys	Glu	Ile	Arg	Glu	Ile	Arg	Glu	Leu	Pro	Gln	Gly	Lys		
			325					330					335				
Asp	Arg	Glu	Gln	Arg	Leu	Ile	Lys	Ala	Phe	Glu	Glu	Phe	Asn	Ser	Ser		
			340					345					350				
Ala	Val	Pro	Glu	Lys	Lys	Gly	Cys	Asp	Val	Glu	Ser	Ile	Leu	Lys	Asp		
		355					360					365					
Leu	Arg	Gly	Lys	Gly	Val	Lys	Val	Glu	Ala	Met	Lys	Ala	Glu	Glu	Trp		
	370					375					380						
His	Ser	Leu	Met	Asn	Gly	Lys	Ala	Ile	Gln	Pro	Ser	Leu	Ile	Ser	Gly		
385					390					395					400		
Ala	Ser	Lys	Pro	Ala	Ala	Lys	Gly	Ala	Ser	Phe	Met	Leu	Thr	Lys	Thr		
			405					410						415			
Pro	Val	Gly	Tyr	Ala	Val	Lys	Ala	Val	Asn	Thr	Val	Asn	Ser	Leu	Thr		
		420						425					430				
Arg	Gln	Ala	Ser	Ala	Asp	Met											
		435															

<210> 9512

<211> 1227

<212> PRT

<213> B.fragilis

<400> 9512

Val	Asn	Lys	Tyr	Phe	Ser	Leu	Met	Thr	Asn	Gln	Val	Thr	Tyr	Leu	Phe		
1				5				10						15			
Phe	His	Gly	Met	Lys	Gln	Ile	Ser	Glu	Asn	Leu	Phe	Thr	Thr	Glu	Glu		
		20						25					30				
Gln	Ala	Ile	Ile	Ala	Arg	Ser	Lys	Ala	Glu	Gly	Ser	Tyr	Met	Lys	Ala		
	35					40						45					
Pro	Asn	Gly	Gln	Ala	Thr	Asn	Leu	Asn	Glu	Lys	Gln	Trp	Ala	Gln	Val		
	50					55					60						
Arg	Thr	Arg	Ala	Phe	Arg	Glu	Trp	Phe	Gly	Asp	Trp	Glu	Asn	Asn	Pro		
65				70				75						80			
Asn	Glu	Ala	Ser	Lys	Val	Arg	Asp	Ala	Asn	Gly	Glu	Pro	Leu	Val	Val		
			85					90					95				
Tyr	His	Gly	Thr	Pro	Ile	Ser	Arg	Asp	Gln	Ala	Ala	Asp	Arg	Ser	Lys		
		100						105					110				
Phe	Arg	Ile	Ala	Asp	Asp	Trp	Glu	Ile	Gln	Thr	Ile	Asn	Ala	Pro	Phe		
		115				120						125					
His	Thr	Phe	Arg	Gly	Gly	Ala	Tyr	Asn	Gly	Leu	Ile	Phe	Thr	Ser	Leu		
	130					135					140						
Thr	Glu	Glu	Lys	Ala	Arg	Ser	Ile	Gly	Glu	Thr	Arg	Ser	Met	Ser	Ile		
145				150				155						160			
Pro	Asp	Ser	Glu	Asp	Gly	Arg	Glu	Gln	Trp	Thr	Thr	Asp	Ser	Tyr	Val		
			165					170						175			
Tyr	Asp	Leu	Phe	Val	Asn	Ala	Gly	Lys	Pro	Phe	Asp	Val	Lys	Asn	Pro		
		180					185						190				
Asn	Ala	Val	Lys	Asp	Val	Leu	Asp	Ala	Leu	Lys	Gly	Gln	Leu	Thr	Ala		
	195					200						205					
Tyr	Asp	Phe	Tyr	Leu	Gly	Met	Glu	Val	Pro	Val	Ser	Arg	Glu	Glu	Ala		

210	215	220
Glu Lys Ile Leu Glu Gly Gly Asn Ser Trp Arg Val Val Glu Thr Pro		
225	230	235
Ser Met Gln Glu Ile Ile Arg Ser Arg Gly Tyr Asp Ala Ile His Ala		
	245	250
Leu Asp Glu Gly Val Gln Tyr Met Ala Val Phe Ala Pro Asn Gln Leu		
	260	265
Lys Ala Ser Gly Lys Tyr Leu Tyr Ser Glu Arg Asn Thr Gly Val Phe		
	275	280
Ser Pro Gly Asn Asn Asp Ile Arg Phe Arg Glu Val His His Gly Ala		
	290	295
Pro Ala Ser Phe Thr Gly Tyr Arg Ser Met Lys Thr Glu Thr Val Arg		
305	310	315
Asp Asp Asn Ile Pro Ala Val Leu Ala Ala Leu Arg Asp Lys Leu Glu		
	325	330
Asp Thr Glu Gln Glu Trp Gln Asp Arg Ile Leu Asp Tyr Ile Ala Glu		
	340	345
Asn Tyr Pro Thr Gln Ala Thr Val Ser Ala Gln Thr Arg Ser Pro Glu		
	355	360
Gly Leu Lys Glu Arg Glu Ala Met Lys Lys Asp Lys Thr Leu Met Lys		
	370	375
Met Lys Glu Glu Ala Val Ala Ala Leu Asn Ala Ala Asp Glu Lys Val		
385	390	395
Met Glu Ala Phe Lys Lys Glu Asn Gly Asp Ile Leu Phe Arg Glu Val		
	405	410
Lys Gly Lys Asp Gly Gly Lys Ser Leu Val Gly Leu His Asn Ile Thr		
	420	425
Glu Glu Lys Leu Leu Lys Ala Leu Lys Leu Gly Gly Leu Ala Asn Pro		
	435	440
Ser Ala Ala Val Ile Asp Ile Ala Arg Gln Ser His Glu Gly Tyr Gly		
	450	455
Glu Ile Ser Leu Ile Leu Pro Ser Ser Met Ile Asp Lys Arg Thr Gly		
465	470	475
Arg Asn Ala Gly Thr Phe Ser Gly Asp Ala Trp Thr Pro Val Tyr Pro		
	485	490
Gln Ile Glu Arg Gln Phe Ser Gly Asp Gly Ser Gly Arg Val Arg Asp		
	500	505
Ala Ile Ser Arg Leu Pro Gln Glu Met Lys Pro Asn Val Arg Ser Thr		
	515	520
Trp Asn Ser Tyr Met Asp Gly Arg Asp Glu Gly Ser Ala Phe Ala Tyr		
	530	535
Gln Phe Leu Tyr Glu Arg Gly Glu Ala Pro Glu Phe Arg Lys Val Glu		
545	550	555
Pro Leu Phe Gly Glu His Leu Arg Asn Arg Ile Ser Ala Ile Asp Ala		
	565	570
Leu Asp Asp Tyr Asp Glu Arg Asn Thr Ala Leu Leu Glu Val Tyr Ile		
	580	585
Glu Glu Asn Phe Gly Gly Asp Gln Thr Lys Phe Lys Asp Tyr Ile Glu		
	595	600
Thr Arg Lys Arg Val Leu Gln Asp Lys Ile Gln Ala Phe Pro Glu Gln		
	610	615
Lys Gln Lys Gly Leu Ala Tyr Arg Lys Ala Val Gln Lys Leu Asn Asp		
625	630	635
Ile Glu Glu Arg Gly Tyr Glu Tyr Ser Ser Val Gln Asp Phe Tyr Asp		
	645	650
Arg Val Lys Ala Asp Ile Arg Gln Ala Gly Ser Val Asp Thr Tyr His		
	660	665
Thr Leu Gln Asp Ala Leu Asp Lys Ile Asp Gly Ser Glu Ala Leu Ser		
	675	680
		685

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Arg	Gln	Tyr	Ala	Glu	Trp	Lys	Glu	Ser	Leu	Ala	Asp	Lys	Tyr	Gly	Ile
690						695					700				
Lys	Glu	Val	Leu	Phe	Lys	Gly	Tyr	Thr	Pro	Asp	Gly	Ile	Arg	Ile	Tyr
705					710					715					720
Leu	Pro	His	Thr	Leu	Glu	Asn	Val	Ser	Gly	Leu	Met	Lys	Arg	Gln	Gly
				725					730					735	
Leu	Ala	Ala	Ala	Thr	Gly	Trp	Gly	Gly	Ser	Phe	Ser	Glu	Phe	Ala	Ala
			740					745					750		
Ala	Leu	Met	Lys	Pro	Val	Gly	Thr	Leu	Asp	Gly	Ile	Arg	Arg	Gln	Lys
		755				760						765			
Gly	Arg	Leu	Thr	Thr	Asp	His	Ser	Asp	Leu	Glu	Ala	Phe	Arg	Asp	Lys
	770				775						780				
Trp	Gln	Glu	Val	Tyr	Phe	Asn	Leu	Gly	Ile	Lys	Leu	Asn	Pro	Gly	Gly
785					790					795					800
Gly	Thr	Phe	Asp	Asp	Thr	Gly	Leu	Tyr	Arg	Val	Gly	Asp	Ile	Ala	Leu
			805						810					815	
Lys	Pro	Asp	Pro	Gly	Ser	Phe	Ala	Lys	Arg	Glu	Tyr	Gly	Val	Glu	Leu
			820					825					830		
Thr	Gly	Glu	Asp	Val	Arg	Gln	Leu	Lys	Glu	Met	Val	Asp	Ala	Ile	Gln
	835						840					845			
Asn	Glu	Tyr	Pro	Ala	Met	Tyr	Phe	Glu	Thr	Lys	Phe	Glu	Arg	Pro	Val
	850				855						860				
Tyr	Leu	Asn	Glu	Phe	Val	Ala	Ala	Val	Val	Pro	Glu	Asn	Val	Ser	Glu
865					870					875					880
Asp	Val	Ser	Lys	Ala	Val	Arg	Glu	Ser	Gly	Leu	Gln	Val	Phe	Val	Tyr
			885						890					895	
Lys	Pro	Lys	Asp	Glu	Ser	Ser	Arg	Asn	Glu	Ala	Val	Lys	Leu	Ala	Ser
			900					905					910		
Glu	Ile	Lys	Gly	Val	Arg	Phe	Arg	Leu	Ala	Gly	Gly	Thr	Gly	Ala	Phe
	915						920					925			
Thr	Pro	Ala	Cys	Thr	Ala	Ser	Gly	Gln	Val	Phe	Leu	Ser	Asp	Glu	Arg
	930				935						940				
Met	Ala	Glu	Leu	Ser	Arg	His	Ala	Val	Phe	Leu	Ala	Arg	Lys	Gln	His
945					950					955					960
Ile	Pro	Val	Asn	Ile	Ile	His	Ser	Ile	Gly	Glu	Val	Asp	Ser	Pro	Lys
			965						970					975	
Val	Arg	Ala	Leu	Ile	Ala	Gly	Gly	Lys	Asp	Ile	Arg	Gly	Trp	Tyr	Asp
		980					985					990			
Ile	Pro	Ser	Asp	Arg	Ile	Cys	Leu	Tyr	Leu	Pro	Lys	Ala	Arg	Gly	Lys
	995					1000						1005			
Glu	Asp	Ile	Glu	Arg	Thr	Leu	Leu	His	Glu	Gly	Val	Gly	His	Tyr	Gly
	1010				1015						1020				
Leu	Arg	Arg	Leu	Ala	Gly	Trp	Lys	His	Met	Asp	Ala	Phe	Leu	Asp	Asp
1025					1030					1035					1040
Ile	Phe	Ala	Gly	Cys	Gly	Glu	Lys	Val	Arg	Gly	Glu	Ile	Ile	Arg	Leu
			1045						1050					1055	
Ala	Gly	Thr	Gly	Lys	Met	Asp	Ile	Arg	Thr	Ala	Thr	Glu	Glu	Tyr	Leu
			1060					1065					1070		
Ala	Gln	Met	Ala	Glu	Ser	Gly	Thr	Asp	Ala	Arg	Val	Trp	Asp	Lys	Ile
	1075					1080						1085			
Arg	Leu	Ala	Phe	Arg	Asn	Leu	Leu	Arg	Lys	Leu	Gly	Phe	Ser	Ile	Glu
	1090				1095						1100				
Val	Asp	Asp	Arg	Glu	Leu	Lys	Gly	Leu	Leu	Ala	Ala	Ser	Arg	Glu	Asn
1105				1110						1115					1120
Leu	Lys	Arg	Thr	Ala	Ala	Thr	Arg	Ile	Pro	Glu	Lys	Ile	Gln	Thr	Pro
			1125					1130					1135		
Lys	Gly	Glu	Leu	Glu	Leu	Thr	Pro	Gly	Tyr	Ala	Ala	Gly	Ser	Leu	Arg
		1140					1145					1150			
Ser	Lys	Asp	Gly	Val	Arg	Asp	Val	Thr	Pro	Phe	Leu	Lys	Glu	Met	Lys

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 1140
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 1120
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<210> 9513
<211> 814
<212> PRT
<213> B.fragilis
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[illegible]

[illegible]

<210> 9514
 <211> 140
 <212> PRT
 <213> B.fragilis

<400> 9514
 Pro Gln Thr Asn His Val Met Leu Asn Glu Asn Asn Arg Ser Ser Asp
 1 5 10 15
 Arg Ile Leu Thr Glu Arg Ile Leu Asp Asp Pro Asp Met Ile Leu Lys
 20 25 30
 Ile Glu Asn Pro Ser Leu Lys Gln Gln Met Ala Ala Val Gln Lys Lys
 35 40 45
 Pro Glu Leu Ile Ala Ser Leu Pro Leu Ala Gly Glu Lys Val Gln Leu
 50 55 60
 Ala Ala Val Ile Ala Cys Pro Glu Ser Ile Leu Leu Val Asp Thr Pro
 65 70 75 80
 Ala Pro Ala Ala Cys Phe Met Ala Val Glu Arg Met Leu Lys Glu Glu
 85 90 95
 Leu Leu Pro Val Pro Gly Val Leu Asn Ala Ala Arg Glu Leu Ile Leu
 100 105 110
 Gln Met Lys Lys Asp Lys Ala Asp Gly Lys Ser Ser Gly Ala Ala Ile
 115 120 125
 Glu Lys Phe Leu Asp Glu Val Lys Pro Ile Lys Asn
 130 135 140

<210> 9515
 <211> 84
 <212> PRT
 <213> B.fragilis

<400> 9515
 Lys Met Pro Glu Pro Ile Arg Pro Asp Thr Lys Asn Gly Lys Val Leu
 1 5 10 15
 Asn Leu Leu Pro Asn Val Ile Phe Tyr Gly Ile Phe Leu Leu Phe Tyr
 20 25 30
 Asn Ser Arg Ser Phe Phe Gln Thr Val Val Asp Pro Arg Leu Asn His
 35 40 45
 Ile Leu Tyr Lys Asn Val Ile Tyr Ile Val Ile Arg Lys Asn Phe Val
 50 55 60
 Arg Ala Pro Asn Asp Trp His Arg Asn Ser Phe Asn Cys Gln Pro Leu
 65 70 75 80
 Asp Ile Thr Glu

<210> 9516
 <211> 320
 <212> PRT
 <213> B.fragilis

<400> 9516
 Arg Ile Met Asp Asp Glu Leu Leu Ile Ala Tyr Phe Lys Gly Glu Val
 1 5 10 15
 Ser Asp Glu Glu Thr Gln Arg Ile Thr Glu Trp Ile Glu Ala Glu Ile
 20 25 30
 Glu His Gln Arg Tyr Tyr Gln Gln Leu Cys Arg Leu Phe Glu Met Ser
 35 40 45
 Tyr Trp Ile Glu Asp Met Pro Glu Gln Thr Glu Val Ala Leu Pro Gln
 50 55 60

Lys	Ala	Lys	Ile	Leu	Pro	Trp	Lys	His	Tyr	Ala	Ile	Ser	Phe	Met	Lys
65					70					75					80
Val	Ala	Ala	Ile	Phe	Val	Leu	Gly	Phe	Ala	Leu	His	Phe	Phe	Leu	Asn
			85						90					95	
Arg	Gln	Thr	Thr	Thr	Thr	His	His	Glu	Leu	Gln	His	Gln	Ile	His	Val
			100					105					110		
Pro	Thr	Gly	Gln	His	Val	Glu	Ile	Met	Leu	Ala	Asp	Gly	Ser	Lys	Val
		115					120					125			
Trp	Leu	Asn	Ser	Gly	Ser	Thr	Leu	Thr	Phe	Pro	Ser	Lys	Phe	Asn	Gly
	130					135					140				
Lys	Lys	Arg	Leu	Val	Glu	Leu	Asp	Gly	Glu	Gly	Phe	Phe	Glu	Val	Lys
145					150				155						160
Ser	Asp	Lys	Glu	His	Pro	Phe	Ile	Val	Ser	Thr	Ser	Lys	Tyr	Gln	Val
			165						170					175	
Lys	Ala	Val	Gly	Thr	Ser	Phe	Asn	Val	Tyr	Asp	Tyr	Gln	Asp	Ser	Pro
		180					185					190			
Gln	Phe	Glu	Ala	Ala	Leu	Leu	Asn	Gly	Lys	Val	Glu	Val	Thr	Thr	Asn
		195					200					205			
Ala	Lys	Lys	Ser	Ser	Ala	Val	Ile	Leu	Thr	Pro	Asn	Gln	Arg	Ala	Ala
	210				215						220				
Leu	Cys	Gln	Gly	Val	Leu	Lys	Val	Lys	Pro	Ile	Glu	Asn	Thr	Asn	Asn
225					230					235					240
Tyr	Leu	Trp	Arg	Lys	Gly	Ile	Leu	Tyr	Phe	Asn	Glu	Pro	Leu	Leu	Glu
			245						250					255	
Val	Phe	Asp	Lys	Leu	Gln	Glu	Tyr	Tyr	Asp	Val	Glu	Phe	Gln	Ile	Arg
			260				265						270		
Asn	Thr	Ser	Leu	Thr	Arg	Lys	Ser	Pro	Tyr	Cys	Thr	Gly	Lys	Phe	Arg
		275					280					285			
Ala	Lys	Asp	Gly	Leu	Glu	His	Ile	Ile	Arg	Val	Leu	Lys	Glu	Thr	Asn
	290					295					300				
His	Phe	Asp	Tyr	Gln	Ile	Asp	Tyr	Glu	Asn	Lys	Lys	Ile	Ile	Ile	Leu
305					310					315					320

<210> 9517

<211> 119

<212> PRT

<213> B.fragilis

<400> 9517

Ile	Met	Asn	Met	Asp	Lys	Asn	Asp	Ser	Phe	Asp	Gly	Pro	Leu	Gln	Glu
1				5					10					15	
Gly	Arg	His	Thr	Thr	Leu	Arg	Ser	Phe	Ser	Trp	Gly	Asn	Arg	Glu	Phe
			20					25				30			
Thr	Ile	Ser	Ser	Asp	Lys	Ile	Ser	Leu	Tyr	Val	Gly	Gly	Ile	Pro	Tyr
		35					40				45				
Asp	Thr	Lys	Pro	Met	Leu	Asp	Ile	Leu	Arg	Gly	Ser	Gly	Val	Asp	Pro
	50					55					60				
Gly	Lys	Leu	Ser	Pro	Ala	Arg	Trp	Ile	Ser	Leu	Leu	Arg	Gly	Gln	Pro
65					70				75					80	
Thr	Arg	Leu	Pro	Gly	Cys	Glu	Lys	Pro	Phe	Met	Leu	Val	Lys	Ala	Pro
			85						90					95	
Ser	Gly	Tyr	Thr	Leu	Lys	Cys	Pro	Gly	Asn	Asn	Pro	Gly	Ala	Gly	Thr
		100						105					110		
Arg	Leu	Phe	Gln	Pro	Glu	Met									
		115													

<210> 9518

<211> 548

<212> PRT

[illegible]

Leu	Val	Asp	Thr	Met	Lys	Lys	Ala	Val	Ile	Leu	Phe	Ser	Leu	Phe	Cys
1				5					10					15	
Phe	Leu	Cys	Ala	Ile	Pro	Val	Val	Gln	Ala	Ala	Asp	Thr	Ile	Phe	Val
			20					25					30		
Arg	Glu	Thr	Arg	Ile	Pro	Ile	Leu	Ile	Glu	Arg	Gln	Asp	Asn	Val	Leu
		35					40					45			
Phe	Tyr	Leu	Arg	Leu	Asp	Ala	Lys	Glu	Ser	Gln	Thr	Leu	Asn	Asp	Val
	50					55					60				
Val	Leu	Asn	Leu	Gly	Glu	Gly	Val	Asn	Leu	Ser	Glu	Ile	Gln	Ser	Ile
65				70					75						80
Lys	Leu	Tyr	Tyr	Gly	Gly	Thr	Glu	Ala	Leu	Gln	Asp	Ser	Gly	Lys	Lys
			85						90					95	
Arg	Phe	Ala	Pro	Val	Gly	Tyr	Ile	Ser	Ser	Asn	Thr	Pro	Gly	Lys	Thr
			100					105					110		
Leu	Ala	Ala	Asn	Pro	Ser	Tyr	Ser	Ile	Lys	Lys	Ser	Glu	Val	Thr	Asn
		115					120					125			
Pro	Gly	Asn	Gln	Val	Val	Leu	Lys	Gly	Asp	Gln	Lys	Leu	Phe	Pro	Gly
	130					135					140				
Ile	Asn	Tyr	Phe	Trp	Ile	Ser	Leu	Gln	Met	Lys	Pro	Gly	Thr	Ser	Leu
145				150					155						160
Thr	Ser	Lys	Val	Thr	Ala	Asp	Ile	Ala	Ser	Ile	Thr	Leu	Asp	Gly	Lys
			165					170						175	
Lys	Ala	Leu	Leu	Asp	Val	Val	Ser	Glu	Asn	Gly	Ile	Glu	His	Arg	Met
		180						185				190			
Gly	Val	Gly	Val	Arg	His	Ala	Gly	Asp	Asp	Asn	Ser	Ala	Ala	Phe	Arg
		195					200					205			
Ile	Pro	Gly	Leu	Val	Thr	Thr	Asn	Lys	Gly	Thr	Leu	Gly	Val	Tyr	
	210					215					220				
Asp	Val	Arg	Tyr	Asn	Ser	Ser	Val	Asp	Leu	Gln	Glu	His	Val	Asp	Val
225				230					235						240
Gly	Leu	Ser	Arg	Ser	Thr	Asp	Gly	Gly	Lys	Thr	Trp	Glu	Lys	Met	Arg
			245					250						255	
Leu	Pro	Leu	Ala	Phe	Gly	Glu	Phe	Gly	Gly	Leu	Pro	Ala	Gly	Gln	Asn
		260					265						270		
Gly	Val	Gly	Asp	Pro	Ser	Ile	Leu	Val	Asp	Thr	Lys	Thr	Asn	Asn	Val
		275					280					285			
Trp	Val	Val	Ala	Ala	Trp	Thr	His	Gly	Met	Gly	Asn	Gln	Arg	Ala	Trp
	290				295						300				
Trp	Ser	Ser	His	Pro	Gly	Met	Asp	Met	Asn	His	Thr	Ala	Gln	Leu	Val
305				310					315						320
Leu	Ala	Lys	Ser	Thr	Asp	Asp	Gly	Lys	Thr	Trp	Ser	Ala	Pro	Ile	Asn
			325					330						335	
Ile	Thr	Glu	Gln	Val	Lys	Asp	Pro	Ser	Trp	Tyr	Phe	Leu	Leu	Gln	Gly
		340						345					350		
Pro	Gly	Arg	Gly	Ile											

Pro Glu Ser Val Cys Met Ala Ser Leu Ile Ser Val Lys Ala Lys Asp
 450 455 460
 Asn Val Leu Gly Lys Asp Leu Leu Ile Phe Ser Asn Pro Asn Thr Thr
 465 470 475 480
 Lys Gly Arg Tyr Asn Thr Thr Ile Lys Ile Ser Leu Asp Gly Gly Val
 485 490 495
 Thr Trp Ser Pro Glu His Gln Leu Leu Asp Glu Gly Asn Asn Trp
 500 505 510
 Gly Tyr Ser Cys Leu Ser Met Ile Asp Lys Glu Thr Ile Gly Ile Leu
 515 520 525
 Tyr Glu Ser Ser Val Ala His Met Thr Phe Gln Ala Val Lys Leu Lys
 530 535 540
 Asp Ile Ile Lys
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<210> 9519
 <211> 532
 <212> PRT
 <213> B.fragilis

<400> 9519
 Leu Tyr Met Thr Asn Thr Asn Ser Ile Met Lys Lys Ile Phe Thr Tyr
 1 5 10 15
 Met Leu Ala Gly Leu Ser Leu Leu Leu Phe Ser Arg Cys Asp Ala Leu
 20 25 30
 Asp Ile Asp Pro Thr Ser Ser Ile Ala Asp Ser Asn Tyr Trp Lys Thr
 35 40 45
 Glu Ala Gln Phe Ser Thr Phe Asn Val Gly Leu His Ala Leu Leu Arg
 50 55 60
 Glu Cys Ser Phe Asn Phe Phe Leu Leu Gly Glu Pro Arg Ala Asp Ile
 65 70 75 80
 Tyr Gly Asp Val Pro Phe Gly Gly Glu Ala Thr Gln Gly Met Glu Arg
 85 90 95
 Leu Pro Phe Asn Thr Ile Asn Lys Glu Asn Thr Gly Ile Ser Asn Phe
 100 105 110
 Ala Gly Met Tyr Lys Val Ile Asn Gln Ile Asn Leu Met Ile Ala Lys
 115 120 125
 Thr Lys Glu Thr Thr Val Leu Ser Glu Ala Gly Lys Asn Tyr Tyr Leu
 130 135 140
 Gly Glu Ala Tyr Gly Met Arg Ala Tyr Leu Tyr Phe His Leu Leu Arg
 145 150 155 160
 Ser Trp Gly Asp Val Ile Leu Tyr Leu Asp Tyr Thr Asn Gly Ala Ser
 165 170 175
 Leu Asp Leu Ser Asn Leu Ser Lys Ala Ala Ser Pro Ala Glu Glu Val
 180 185 190
 Met Lys Gln Ile Lys Glu Asp Ile Thr Ala Ser Glu Lys Gly Phe Gly
 195 200 205
 Ser Asp Tyr Ser Phe Lys Tyr Gly Arg Tyr Tyr Trp Ser Met Ala Ala
 210 215 220
 Thr Gln Met Leu Lys Gly Glu Val Tyr Leu Trp Ser Gly Arg Gln Met
 225 230 235 240
 Gly Gly Gly Thr Ala Asp Tyr Thr Thr Ala Lys Thr Ala Leu Gln Ser
 245 250 255
 Ile Val Ser Asn Ala Asn Val Ser Leu Gln Asp Asp Phe Ser Lys Val
 260 265 270
 Phe Ala Tyr Asn Asn Lys Asp Asn Ser Glu Ile Ile Phe Ser Ile Arg
 275 280 285
 Asn Ala Lys Asp Glu Tyr Asn Met Trp Asp Asp Lys Phe Arg Gln Asn
 290 295 300

Leu Val Pro Gln Gln Ala Tyr Met Thr Ser Thr Tyr Cys Asn Lys Glu
 305 310 315 320
 Gly Val Ser Phe Lys Asp Leu Pro Glu Gly Gln Leu Asn Gly Leu Ile
 325 330 335
 Arg Leu Gln Ile Arg Tyr Asp Leu Tyr Asn Lys Ala Phe Arg Asp Gly
 340 345 350
 Asp Thr Arg Lys Asp Ala Ser Met Thr Ala Val Tyr Gln Lys Gln Gln
 355 360 365
 Asp Gly Thr Val Lys Tyr Ile Ala Pro Phe Cys Asn Lys Tyr Gln Gly
 370 375 380
 Val Leu Leu Asp Gly Ala Ser Gln Arg Ser Phe Leu Asn Asp Tyr Pro
 385 390 395 400
 Ile Tyr Arg Tyr Ala Asp Cys Leu Leu Leu Leu Ala Glu Ala Lys Ala
 405 410 415
 Leu Leu Gly Glu Asp Pro Thr Ala Glu Ile Asn Gln Val Arg Glu Arg
 420 425 430
 Ala Tyr Gly Lys Glu Phe Phe Glu Thr Asn Lys Ala Thr Leu Ala Tyr
 435 440 445
 Pro Asn Asp Lys Gly Asp Phe Tyr Thr Asp Asn Lys Tyr Met Ser Gly
 450 455 460
 Asp Glu Asp Pro Leu Glu Ala Ile Leu Lys Glu Arg Met Arg Glu Phe
 465 470 475 480
 Met Phe Glu Gly Lys Arg Trp Tyr Asp Leu Arg Leu Leu Gly Ala Asp
 485 490 495
 Tyr Val Thr Lys Arg Thr Ser Ala Val Ala Thr Arg Leu Leu Trp Pro
 500 505 510
 Ile Asn Glu Ser Val Leu Thr Asp Asn Pro Ala Leu Lys Gln Thr Pro
 515 520 525
 Gly Tyr Gln Asn
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<210> 9520

<211> 93

<212> PRT

<213> B.fragilis

<400> 9520

Asp Arg Arg Ala Ala Val Asp Ala Ile Asn Gly Val Asn Ile Asp Leu
 1 5 10 15
 Ser Pro Pro Ser Met Ala Gly Ala Val Gly Met Arg Glu Trp Pro His
 20 25 30
 Leu Leu Ile Val Leu Ser Val Glu Glu Glu Pro Asp Gly Arg Ser Arg
 35 40 45
 Leu Phe Ala Leu Ala Ala Trp Val His Glu Arg Pro Ser Ala Phe Thr
 50 55 60
 Lys Asp Ala Cys Ala Ala Thr Arg Asp Thr Ala Pro Arg Ala Ala Gly
 65 70 75 80
 Lys Thr Leu His Ser Ala Gln Leu Leu Met Lys Thr Arg
 85 90

<210> 9521

<211> 1083

<212> PRT

<213> B.fragilis

<400> 9521

Asp Cys Thr His Phe Gln Val Phe Ile Phe Met Glu Phe Arg Arg Asp
 1 5 10 15
 Asn Phe Pro Phe Leu Leu Thr Lys Asn Gln Phe Met Lys Lys Val Leu

Figure 6. The effect of the number of iterations on the accuracy of the proposed algorithm. The results are shown for different values of α and β . The x-axis represents the number of iterations (from 0 to 100), and the y-axis represents the error (from 0 to 1). The legend indicates the parameter values: $\alpha = 0.5, \beta = 0.5$ (blue line); $\alpha = 0.7, \beta = 0.3$ (orange line); $\alpha = 0.9, \beta = 0.1$ (green line); $\alpha = 0.1, \beta = 0.9$ (red line).

Thr	Thr	Gln	Tyr	Gln	His	Trp	Glu	Val	Leu	Pro	Val	Tyr	Ala	Tyr	Asn
			500					505					510		
Val	Ala	Gly	Asp	Pro	Tyr	Tyr	Thr	Val	Trp	Asp	Met	Gly	Tyr	Gly	Ser
		515					520					525			
Tyr	Ala	Ala	Gly	Ser	Ser	Arg	Val	Asn	Glu	Tyr	Ser	Trp	Lys	Glu	Asn
	530					535					540				
Tyr	Tyr	Thr	Thr	Asn	Ile	Tyr	Ser	Asp	Tyr	Phe	Lys	Gln	Phe	Asp	Asn
545				550						555					560
Gly	His	Tyr	Phe	Lys	Val	Met	Ala	Gly	Phe	Asn	Ala	Glu	Leu	Tyr	Lys
			565						570					575	
Thr	Arg	Asn	Ile	Thr	Ala	Glu	Lys	Asn	Thr	Leu	Ile	Thr	Pro	Gly	Val
		580						585					590		
Pro	Thr	Ile	Asn	Thr	Ala	Thr	Asp	Asp	Pro	Gln	Ala	Tyr	Gly	Gly	Tyr
	595						600					605			
Ala	Asp	Asn	Ser	Val	Ala	Gly	Phe	Phe	Ala	Arg	Val	Asn	Trp	Ser	Tyr
	610					615					620				
Lys	Asp	Arg	Tyr	Met	Phe	Glu	Ala	Asn	Gly	Arg	Tyr	Asp	Gly	Ser	Ser
625				630						635					640
Arg	Phe	Val	Gly	Lys	Glu	Arg	Trp	Gly	Phe	Phe	Pro	Ser	Phe	Ser	Ala
			645						650					655	
Gly	Trp	Asn	Ile	Ala	Arg	Glu	Pro	Phe	Met	Glu	Ser	Phe	Ala	Glu	Lys
		660						665					670		
Ile	Asn	Met	Gly	Ser	Leu	Lys	Leu	Arg	Ala	Ser	Trp	Gly	Gln	Leu	Gly
	675						680					685			
Asn	Thr	Asn	Thr	Asn	Asp	Ala	Trp	Tyr	Pro	Phe	Tyr	Gln	Thr	Met	Pro
	690				695						700				
Val	Gly	Ser	Asn	Tyr	Gly	Trp	Leu	Val	Asn	Gly	Glu	Arg	Pro	Asn	Tyr
705				710						715					720
Ala	Thr	Asn	Pro	Gly	Ile	Val	Ser	Ser	Lys	Lys	Thr	Trp	Glu	Thr	Val
			725						730					735	
Glu	Thr	Trp	Asp	Val	Gly	Leu	Asp	Trp	Ser	Phe	Phe	Asn	Asn	Arg	Leu
			740					745					750		
Ser	Gly	Ser	Phe	Asp	Tyr	Phe	Val	Arg	Tyr	Thr	Tyr	Asp	Met	Ile	Gly
	755						760					765			
Pro	Ala	Pro	Glu	Leu	Ser	Ser	Leu	Leu	Gly	Thr	Ser	Val	Pro	Lys	Ile
	770					775					780				
Asn	Asn	Ser	Asp	Met	Lys	Ser	Tyr	Gly	Phe	Glu	Leu	Glu	Val	Asn	Trp
785				790						795					800
Arg	Asp	Arg	Ile	Gly	Glu	Val	Ser	Tyr	Gly	Ala	Lys	Phe	Val	Leu	Ser
			805						810					815	
Asp	Asp	Gln	Gln	Lys	Ile	Leu	Arg	Tyr	Pro	Asn	Asp	Ser	Tyr	Asp	Val
		820						825					830		
Gly	Ser	Tyr	Tyr	Lys	Gly	Glu	His	Leu	Asn	Asp	Ile	Trp	Gly	Leu	Thr
		835					840					845			
Thr	Ile	Gly	Ile	Ala	Lys	Ser	Gln	Glu	Glu	Met	Asp	Ala	His	Leu	Ala
	850					855					860				
Lys	Val	Asp	Gln	Ser	Ser	Val	Gly	Thr	Asn	Trp	Gly	Val	Gly	Asp	Ile
865				870						875					880
Met	Tyr	Ala	Asp	Leu	Asp	Gly	Asp	Gly	Lys	Ile	Ser	Asn	Gly	Thr	Asn
			885						890					895	
Lys	Leu	Gly	Asp	Thr	Gly	Asp	Tyr	Arg	Ile	Ile	Gly	Asn	Ser	Thr	Pro
		900						905					910		
Arg	Phe	Lys	Tyr	Gly	Ile	Thr	Leu	Asp	Ala	Ala	Trp	Lys	Gly	Phe	Asp
		915					920					925			
Phe	Ser	Ile	Phe	Met	Gln	Gly	Ile	Gly	Lys	Arg	Asp	Leu	Trp	Leu	Asp
	930					935					940				
Gly	Cys	Tyr	Phe	Trp	Gly	Ala	Asn	Gly	Gln	Gly	Asn	Glu	Trp	Gln	Ser
945				950						955					960
Thr	Gly	Phe	Ala	Glu	His	Trp	Asp	Phe	Phe	Arg	Pro	Glu	Gly	Asp	Pro

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965 970 975
 Leu Gly Ala Asn Leu Asn Ser Tyr Tyr Pro Arg Val Asn Phe Ser Gly
 980 985 990
 Asp Arg Asn Thr Lys Val Gln Thr Arg Tyr Leu Gln Asn Gly Ala Tyr
 995 1000 1005
 Leu Arg Leu Lys Asn Val Gln Leu Gly Tyr Thr Leu Pro Arg Val Trp
 1010 1015 1020
 Thr Glu Lys Ala Gly Ile Ser Ser Val Arg Val Tyr Val Ser Gly Asp
 1025 1030 1035 1040
 Asn Leu Ala Thr Ile Thr Ser Leu Ser Lys Ile Phe Asp Pro Glu Ala
 1045 1050 1055
 Thr Gly Ser Leu Ala Gly Thr Gly Ser Gly Lys Leu Tyr Pro Leu Gln
 1060 1065 1070
 Arg Val Ile Ser Val Gly Val Asn Val Asn Phe
 1075 1080

<210> 9522

<211> 861

<212> PRT

<213> B.fragilis

<400> 9522

Lys Ser Glu Gln Phe Met Met Lys Lys Leu Leu Tyr Gly Leu Val Cys
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 Cys Cys Ser Leu Ala Tyr Gly Gln Asn Gln Asp Thr Ser Asp Val Leu
 20 25 30
 Met Leu Asn Asp Asp Trp Ser Phe Ser Gln Val Gly Thr Glu Lys Trp
 35 40 45
 Leu Thr Ala Thr Val Pro Gly Thr Val His Gln Asp Leu Ile His His
 50 55 60
 Lys Leu Leu Pro Asp Pro Phe Tyr Gly Thr Asn Glu Lys Lys Ile Gln
 65 70 75 80
 Trp Val Glu Asp Glu Asp Trp Glu Tyr Lys Thr Cys Phe Val Val Thr
 85 90 95
 Glu Glu Gln Leu Lys Arg Asp Ala Ala Gln Leu Phe Phe Glu Gly Leu
 100 105 110
 Asp Thr Tyr Ala Asp Val Tyr Leu Asn Gly Ser Leu Val Leu Lys Ser
 115 120 125
 Asp Asn Met Phe Val Gly Tyr Ala Val Pro Val Lys Gln Val Leu Arg
 130 135 140
 Lys Gly Glu Asn Leu Leu His Val Tyr Phe His Ser Pro Ile Lys Gln
 145 150 155 160
 Thr Leu Pro Gln Trp Ser Ser Asn Gly Phe Asn Tyr Pro Ala Asp Asn
 165 170 175
 Asp His His Glu Lys Arg Leu Ser Val Phe Thr Arg Lys Ala Pro Tyr
 180 185 190
 Ser Tyr Gly Trp Asp Trp Gly Ile Arg Met Val Thr Ser Gly Ile Trp
 195 200 205
 Arg Pro Val Thr Leu Arg Phe Tyr Asp Val Ala Thr Ile Ala Asp Tyr
 210 215 220
 His Val Lys Gln Leu Ser Leu Thr Asp Gln Val Ala Lys Leu Ser Asn
 225 230 235 240
 Glu Leu Glu Ile Asn Ser Ile Ser Glu Lys Glu Lys Ser Ala Glu Val
 245 250 255
 Leu Ile Ser Tyr Ser Leu Gln Gly Gly Lys Glu Val Thr Val Lys Glu
 260 265 270
 Asn Val Thr Leu Lys Pro Gly Leu Asn Lys Ile His Ile Pro Leu Asp
 275 280 285
 Ile Gln Asn Pro Val Arg Trp Met Pro Asn Gly Trp Gly Glu Pro His

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290	295	300
Leu Tyr Asp Phe Ser	Ala Gln Val Ile Cys Asp	Gly Lys Thr Ile Ala
305	310	315
Ser Arg Gln His Arg	Ile Gly Leu Arg Thr Ile	Arg Val Val Asn Glu
	325	330
Lys Asp Lys Glu Gly	Glu Ser Phe Tyr Phe	Glu Val Asn Gly Ile Pro
	340	345
Met Phe Ala Lys Gly	Ala Asn Tyr Ile Pro Asp	Asp Ala Leu Leu Pro
	355	360
Cys Ile Thr Thr Glu	Arg Tyr Lys Thr Leu Phe	Arg Asp Met Lys Glu
	370	375
Ala Asn Met Asn Met	Val Arg Ile Trp Gly	Gly Gly Thr Tyr Glu Asp
	385	390
Asp Arg Phe Tyr Asp	Leu Ala Asp Glu Asn	Gly Ile Leu Val Trp Gln
	405	410
Asp Phe Met Phe Ala	Cys Thr Ala Tyr Pro	Ser Asp Pro Thr Phe Leu
	420	425
Lys Arg Val Glu Glu	Glu Ala Glu Tyr Asn	Ile Lys Arg Leu Arg Asn
	435	440
His Ala Ser Leu Ala	Met Trp Cys Gly Asn	Asn Glu Ile Leu Glu Gly
	450	455
Leu Lys Tyr Trp Gly	Trp Gln Lys Asn Tyr	Thr Pro Glu Val Tyr Glu
	465	470
Asn Met Phe Arg Gly	Tyr Asp Lys Leu Phe	Arg Gly Leu Leu Pro Ala
	485	490
Lys Val Gln Glu Leu	Asp Glu Gly Arg Phe	Tyr Lys His Ser Ser Pro
	500	505
Tyr Phe Ala Asn Trp	Gly Arg Pro Glu Ser	Trp Gly Ile Gly Asp Ser
	515	520
His Asn Trp Gly Val	Trp Tyr Gly Lys Lys	Thr Phe Glu Ser Leu Asp
	530	535
Thr Asp Leu Pro Arg	Phe Met Ser Glu Phe	Gly Phe Gln Ser Phe Pro
	545	550
Glu Met Lys Thr Ile	Ala Thr Phe Ala Ala	Pro Glu Asp Tyr Gln Ile
	565	570
Glu Ser Glu Val Met	Asn Gly His Gln Lys	Ser Ser Ile Gly Asn Asp
	580	585
Leu Ile Arg Thr Tyr	Met Glu Arg Asp Tyr	Ile Val Pro Glu Lys Phe
	595	600
Glu Asp Phe Val Tyr	Ile Gly Leu Val Leu	Gln Gly His Gly Met Arg
	610	615
His Gly Met Glu Ala	His Arg Arg Asn Arg	Pro Tyr Cys Met Gly Thr
	625	630
Leu Tyr Trp Gln Leu	Asn Asp Ser Trp Pro	Val Val Ser Trp Ser Ser
	645	650
Ile Asp Tyr Tyr Gly	Asn Trp Lys Ala Leu	His Tyr Gln Ala Lys Arg
	660	665
Ala Phe Ala Pro Leu	Leu Val Asn Ala Ile	Gln Glu Gly Asp Ser Leu
	675	680
Asn Ile Tyr Leu Ile	Ser Asp Met Leu Glu	Lys Gln Ser Gln Leu Thr
	690	695
Leu Glu Met Lys Val	Ile Asp Phe Asn Gly	Lys Thr Leu Asp Lys Glu
	705	710
Val Ile Lys Ala Val	Glu Val Ala Met Asn	Thr Ser Ser Cys Ile Val
	725	730
Arg Lys Pro Leu Asp	Thr Trp Val Asn Pro	Glu Gln Arg Lys Ser Ser
	740	745
Phe Leu Leu Leu Ser	Leu Lys Asp Lys Ser	Gly Arg Lys Val Ala Glu
	755	760
		765

Glu	Val	Tyr	Phe	Phe	Asp	Lys	Thr	Lys	Asn	Leu	Glu	Leu	Pro	Gln	Thr
770						775					780				
Ala	Ile	Ser	Met	Lys	Val	Lys	Gln	Leu	Asp	Gly	Lys	Cys	Glu	Leu	Thr
785					790					795					800
Leu	Ser	Ser	Pro	Lys	Leu	Ala	Lys	Asp	Val	Phe	Val	Gln	Ile	Pro	Val
				805					810					815	
Gln	Gly	Ala	Arg	Phe	Thr	Asp	Asn	Phe	Phe	Asp	Leu	Leu	Pro	Gly	Glu
			820					825					830		
Asn	Lys	Lys	Ile	Thr	Ile	Thr	Ser	Pro	Glu	Ile	Lys	Lys	Gly	Glu	Ser
	835						840				845				
Leu	Asn	Ile	Thr	Val	Lys	His	Val	Arg	Asp	Thr	Tyr	Asn			
850						855					860				

<210> 9523

<211> 549

<212> PRT

<213> B.fragilis

<400> 9523

Lys	Ile	Ile	Asn	Met	Lys	Arg	Ala	Lys	Ser	Thr	Ile	Leu	Tyr	Ser	Leu
1			5					10						15	
Leu	Val	Ala	Phe	Val	Gly	Val	Leu	Tyr	Thr	Ser	Cys	Ala	Asp	Lys	Leu
		20						25					30		
Asp	Leu	Ser	Pro	Ile	Asp	Tyr	Tyr	Gly	Ser	Gly	Ser	Tyr	Trp	Lys	Thr
	35					40						45			
Glu	Ala	His	Val	Ile	Gly	Tyr	Met	Asp	Gly	Ile	His	Lys	His	Leu	Arg
	50					55					60				
Asp	Ala	Thr	Phe	Gln	His	Thr	Phe	Ile	Trp	Gly	Glu	Ala	Arg	Gly	Gly
65					70					75					80
Ala	Leu	Ile	Thr	Ser	Gly	Thr	Ser	Ala	Asp	Gly	Met	Gly	Met	Leu	Tyr
				85					90					95	
Gly	Asp	Ile	Lys	Leu	Gln	Asn	Phe	Asp	Glu	Asp	His	Thr	Gly	Gly	Ile
			100					105					110		
Lys	Lys	Phe	Gly	Asp	Ile	Phe	Gly	Arg	Leu	Thr	Asn	Leu	Asn	Leu	Phe
		115					120					125			
Ile	Ala	Arg	Val	Thr	Asp	Ala	Thr	Tyr	Met	Asp	Asp	Val	Lys	Lys	Gly
	130					135						140			
Tyr	Tyr	Leu	Gly	Gln	Ala	Tyr	Gly	Leu	Arg	Ala	Phe	Tyr	Tyr	Phe	Asp
145					150					155					160
Leu	Tyr	Arg	Thr	Tyr	Gly	Gly	Val	Pro	Leu	Arg	Leu	Thr	Ala	Asp	Val
			165						170					175	
Val	Glu	Gly	Val	Ile	Asp	Pro	Asn	Lys	Leu	Tyr	Met	Ala	Arg	Ala	Thr
			180					185					190		
Pro	Lys	Glu	Val	Met	Asp	Gln	Ile	Lys	Lys	Asp	Leu	Asp	Lys	Ser	Met
	195						200					205			
Glu	Ser	Phe	Gly	Asp	Asn	Asn	Ser	Phe	Asp	Pro	Asn	Asn	Arg	Gly	Asn
	210					215					220				
Lys	Lys	Gly	Tyr	Trp	Ser	Lys	Ala	Ala	Thr	Glu	Cys	Leu	Met	Gly	Glu
225					230					235					240
Val	Tyr	Leu	Trp	Ile	Ser	Lys	Val	Ser	Thr	Gly	Asp	Asp	Ala	Ala	Asn
			245						250					255	
Glu	Ala	Asn	Leu	Glu	Ile	Ala	Lys	Thr	His	Leu	Gln	Asn	Val	Ile	Asn
		260						265					270		
Asn	Tyr	Gly	Leu	Lys	Met	Leu	Asp	Phe	Ser	Ser	Val	Phe	Asp	Ala	
	275						280					285			
Lys	Asn	Gly	Lys	Gly	Asn	Ser	Glu	Ile	Ile	Phe	Ala	Val	Arg	Tyr	Met
	290					295					300				
Glu	Gly	Glu	Ala	Gly	Asn	Asn	Asn	Asn	Leu	Phe	Thr	Tyr	Ala	Met	Ala
305					310					315					320

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Thr Gly Ser Thr Lys Asp Asn Tyr Leu Ala Asn Gly Glu Lys Phe Leu
 325 330 335
 Asp Ala Leu Asn Ile Ala Asn Thr Gly Ser Gln Gln Leu Glu Tyr Lys
 340 345 350
 His Glu Ile Tyr Asn Ser Phe Asp Val Ala Asp Thr Arg Arg Glu Ala
 355 360 365
 Thr Phe Ile Ala Ser Tyr Ser Lys Asn Thr Glu Thr Lys Glu Leu Thr
 370 375 380
 Leu Arg Gly Thr His Val Arg Lys Asn Ile Gly Tyr Val Asn Ala Gln
 385 390 395 400
 Gly Ser Arg Ile Tyr Cys Gly Asp Tyr Ile Ile Tyr Arg Leu Pro Leu
 405 410 415
 Val Tyr Leu Met Leu Ala Glu Ile Glu Asn Met Gln Gly Gly Asp Val
 420 425 430
 Ala Lys Tyr Ile Asn Leu Val Arg Glu Arg Ala Tyr Ser Thr Asn Trp
 435 440 445
 Asp Lys Ala Ile Tyr Gly Tyr Thr Asn Ala Asp Phe Thr Thr Asn Glu
 450 455 460
 Leu Ala Ile Leu His Glu Lys Asp Lys Glu Phe Ile Gln Glu Gly Gln
 465 470 475 480
 Arg Trp Trp Asp Ile Arg Arg Met Thr Leu Thr Lys Gly Gly Lys His
 485 490 495
 Leu Val Phe Val Lys Glu Gly Ser Ile Gly Thr Asp Met Pro Thr Leu
 500 505 510
 Asp Glu Ala Thr Glu Ala His Lys Val Leu Trp Pro Val Asp Lys Asp
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 Leu Leu Gly Asn Asp Pro Leu Ile Tyr Gln Thr Pro Gly Tyr Ala Thr
 530 535 540
 Tyr Lys Lys Ala Glu
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<210> 9524

<211> 691

<212> PRT

<213> B.fragilis

<400> 9524

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 Ile Leu Ser Ala Gln Lys Arg Val Lys Val Ala Cys Val Gly Asn Ser
 20 25 30
 Ile Thr Tyr Gly Tyr Thr Leu Pro Asn Pro Ala Thr Asp Ser Tyr Pro
 35 40 45
 Ser Gln Leu Gln Gln Leu Leu Gly Glu Thr Tyr Glu Val Gly Asn Phe
 50 55 60
 Gly Lys Ser Gly Ala Thr Leu Leu Asn Lys Gly His Arg Pro Tyr Met
 65 70 75 80
 Gln Gln Glu Asp Phe Lys Lys Ala Ile Ala Phe Ala Gly Asp Ile Val
 85 90 95
 Val Ile His Leu Gly Ile Asn Asp Thr Asp Pro Arg Asp Trp Pro Asn
 100 105 110
 Tyr Arg Asp Ser Phe Val Lys Asp Tyr Leu Ala Leu Ile Asp Ser Phe
 115 120 125
 Arg Val Ala Asn Pro Lys Cys His Ile Ile Ile Ala Arg Leu Thr Pro
 130 135 140
 Ile Ala Asp Arg His Pro Arg Phe Glu Ser Gly Thr Arg Asp Trp His
 145 150 155 160
 Gly Glu Ile Gln Gln Ser Ile Glu Thr Ile Ala Lys Tyr Ala Gly Val
 165 170 175

Gln Leu Met Asp Phe His Glu Pro Leu Tyr Pro Tyr Pro Tyr Leu Leu
 180 185 190
 Pro Asp Ala Val His Pro Asn Val Glu Gly Ala Gly Ile Leu Ala Lys
 195 200 205
 Thr Val Tyr Ser Ala Ile Thr Gly Asp Phe Gly Gly Leu His Leu Ser
 210 215 220
 Glu Leu Tyr Thr Asp Asn Met Val Leu Gln His Gly Glu Pro Leu Ala
 225 230 235 240
 Ile Arg Gly Lys Ala Asn Ala Gly Glu Lys Val Thr Val Ser Ile Ala
 245 250 255
 Lys Gln Lys Leu Thr Ala Lys Ala Ala Ser Asn Gly Asp Trp Thr Val
 260 265 270
 Thr Ile Gln Pro Leu Lys Ala Gly Gly Pro Tyr Thr Leu Thr Val Ser
 275 280 285
 Ala Gly Lys Gln Lys Gln Thr Phe Asn Asn Val Leu Ala Gly Glu Val
 290 295 300
 Trp Leu Cys Ser Gly Gln Ser Asn Met Glu Phe Tyr Leu Ser Trp Ser
 305 310 315 320
 Lys Thr Ala Lys Arg Asp Ile Pro Gln Ala Ala Asn Asp Gln Ile Arg
 325 330 335
 Leu Phe Asp Met Lys Ala Arg Trp Arg Thr Asp Ala Val Glu Trp Asp
 340 345 350
 Ala Ser Val Leu Asp Ser Leu Asn His Leu Gln Tyr Tyr Lys Asp Thr
 355 360 365
 Glu Trp Thr Val Cys Ser Pro Ala Thr Ala Gly Ser Phe Ser Ala Val
 370 375 380
 Ala Tyr Tyr Phe Gly Lys Met Leu Gln Asp Ser Leu Lys Val Pro Val
 385 390 395 400
 Gly Leu Ile Cys Asn Ala Ile Gly Gly Ser Pro Thr Glu Ala Trp Val
 405 410 415
 Asp Arg Ser Thr Leu Glu Tyr Lys Phe Pro Ala Ile Leu Arg Asn Trp
 420 425 430
 Thr Gln Asn Asp Phe Ile Gln Asp Trp Val Arg Gly Arg Ala Ala Leu
 435 440 445
 Asn Val Lys Lys Ala Thr Asn Lys Gln Gln Arg His Pro Tyr Glu Pro
 450 455 460
 Cys Tyr Leu Tyr Glu Ala Gly Ile Arg Pro Leu Glu Gln Tyr Pro Ile
 465 470 475 480
 Lys Gly Ile Ile Trp Tyr Gln Gly Glu Ser Asn Ala His Asn Arg Glu
 485 490 495
 Ala His Glu Lys Leu Phe Lys Leu Leu Val Glu Ser Trp Arg Lys Asn
 500 505 510
 Trp Glu Asn Glu Asn Leu Pro Phe Tyr Tyr Val Gln Leu Ser Ser Ile
 515 520 525
 Asn Arg Pro Ser Trp Pro Trp Phe Arg Asp Ser Gln Arg Arg Met Met
 530 535 540
 Tyr Glu Ile Pro His Thr Gly Met Ala Val Ser Ser Asp Leu Gly Asp
 545 550 555 560
 Ser Leu Asp Val His Pro Lys His Lys Gln Pro Val Gly Glu Arg Leu
 565 570 575
 Ala His Trp Ala Leu Asn Gln Thr Tyr Gly Lys Lys Asn Val Thr Pro
 580 585 590
 Ser Gly Pro Met Phe Arg Asn Val Glu Phe Arg Asp Gly Ala Ala Tyr
 595 600 605
 Val Ser Phe Asp Cys Ala Glu Gly Met His Ala Ser Asp Gly Lys Pro
 610 615 620
 Leu Gln Thr Phe Glu Val Ala Glu Thr Glu Asp Ile Tyr Tyr Pro Ala
 625 630 635 640
 Thr Ala Glu Ile Val Gly Asn Gln Ile Lys Val Tyr Ser Lys Glu Val

180 185 190
 195 200 205
 210 215 220
 225 230 235 240
 245 250 255
 260 265 270
 275 280 285
 290 295 300
 305 310 315 320
 325 330 335
 340 345 350
 355 360 365
 370 375 380
 385 390 395 400
 405 410 415
 420 425 430
 435 440 445
 450 455 460
 465 470 475 480
 485 490 495
 500 505 510
 515 520 525
 530 535 540
 545 550 555 560
 565 570 575
 580 585 590
 595 600 605
 610 615 620
 625 630 635 640

				645					650					655				
Lys	Asn	Pro	Leu	His	Val	Arg	Tyr	Gly	Trp	Gln	Pro	Phe	Thr	Arg	Ala			
			660						665				670					
Asn	Leu	Val	Asn	Gly	Asp	Gly	Leu	Pro	Ala	Ser	Thr	Phe	Arg	Thr	Asp			
		675					680					685						
Trp	Gly	Lys																
	690																	

<210> 9525

<211> 521

<212> PRT

<213> B.fragilis

<400> 9525

Ile	Met	Lys	Lys	Ile	Ile	Tyr	Ile	Ile	Ser	Leu	Phe	Val	Ser	Ser	Val			
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Leu	Tyr	Thr	Ser	Cys	Asp	Ala	Leu	Asp	Leu	Ala	Pro	Glu	Asp	Tyr	Phe			
			20					25					30					
Gly	Ser	Gly	Asn	Tyr	Trp	Asn	Asn	Glu	Ala	Gln	Val	Glu	Gly	Phe	Met			
		35				40						45						
Tyr	Gly	Met	His	Ser	Gln	Leu	Arg	Gly	Asn	Tyr	Asn	Met	Phe	Tyr	Cys			
	50				55						60							
Leu	Gly	Glu	Leu	Arg	Gly	Thr	Gln	Arg	Val	Gly	Ser	Ser	Ser	Ser	Gln			
65				70					75						80			
Asn	Thr	Ser	Leu	Asp	Tyr	Ala	Ile	Leu	Arg	Thr	Asn	Thr	Leu	Ser	Gln			
			85					90					95					
Asp	Asn	Pro	Gly	Phe	Thr	Asn	Trp	Phe	Gly	Leu	Tyr	Ser	Pro	Ile	Met			
			100					105					110					
Gln	Val	Asn	His	Phe	Ile	Gln	Lys	Val	Glu	Asn	Glu	Cys	Ala	Phe	Leu			
		115				120						125						
Ser	Glu	Ala	Asp	Arg	Lys	Thr	Tyr	Leu	Gly	Gln	Ala	Tyr	Gly	Leu	Arg			
	130				135						140							
Ala	Leu	Tyr	Tyr	Phe	Met	Leu	Tyr	Lys	Thr	Tyr	Gly	Gly	Val	Pro	Ile			
145				150					155					160				
Val	Thr	Thr	Val	Glu	Leu	Leu	Asp	Gly	Lys	Val	Thr	Ala	Asp	Lys	Phe			
			165					170						175				
Tyr	Val	Glu	Arg	Ala	Thr	Pro	Glu	Ala	Thr	Leu	Ser	Phe	Ile	Lys	Glu			
		180						185					190					
Asp	Ile	Gly	Lys	Ser	Glu	Ser	Tyr	Phe	Gly	Thr	Thr	Glu	Ile	Asn	Asn			
	195					200						205						
Lys	His	Asp	Lys	Thr	Met	Trp	Ser	Lys	Ala	Ala	Thr	Leu	Met	Leu	Lys			
	210				215						220							
Ala	Glu	Ile	Tyr	Met	Trp	Ala	Ala	Lys	Val	Ser	Ile	Asn	Gly	Tyr	Thr			
225				230						235				240				
Ala	Ser	Gly	Lys	Ser	Asp	Leu	Glu	Ile	Ala	Lys	Asn	Ala	Leu	Asn	Gly			
			245					250					255					
Ile	Ile	Gly	Lys	Phe	Gln	Leu	Leu	Asn	Lys	Phe	Ser	Asp	Val	Phe	Ser			
		260				265							270					
Thr	Ser	Asn	Arg	Asn	Asn	Ala	Glu	Val	Ile	Phe	Thr	Leu	His	Phe	Ala			
		275				280						285						
Asp	Gly	Glu	Ala	Thr	Asn	Trp	Gly	Gly	Met	Phe	Leu	Tyr	Gln	Asp	Ala			
	290				295					300								
Val	Phe	Ile	Gly	Gln	Val	Tyr	Gly	Arg	Asp	Asp	Lys	Lys	Ile	Glu	Thr			
305				310					315					320				
Asp	Thr	Leu	Asn	Leu	Lys	Gly	Thr	Gly	Gly	Val	Phe	Arg	His	Glu	Tyr			
			325					330					335					
Thr	Glu	Asp	Phe	Trp	Lys	Ser	Tyr	Asp	Glu	Lys	Asp	Thr	Arg	Arg	Asp			
		340						345				350						
Ala	Thr	Phe	Leu	Glu	Tyr	Tyr	Thr	Lys	Lys	Asn	Lys	Glu	Gly	Phe	Gly			

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355	360	365
Cys Val Met Gln Lys Ala Ile Gly Ser Ile Asn Ser Asn Asn Asn Arg		
370	375	380
Ile Tyr Asp Thr Asp Phe Ile Val Tyr Arg Tyr Ala Asp Ala Leu Leu		
385	390	395
Met Met Ala Glu Val Glu Asn Gly Leu Gly Asn Pro Cys Ala Gly Tyr		
	405	410
Ile Asn Glu Val Arg Lys Arg Ala Tyr Gly Ser Asp Tyr Glu Ala Asn		
	420	425
Lys Tyr Thr Glu Gly Asn Tyr Ala Glu Asn Glu Leu Ala Ile Leu His		
	435	440
Glu Arg Asp Lys Glu Phe Val Trp Glu Gly Lys Arg Trp Phe Asp Val		
	450	455
Val Arg Met His Asp Ala Asn Gly Lys Ser Leu Ala Phe Ser Ala Thr		
465	470	475
Ala Asn Tyr Pro Ala Asp Lys Ser Ile Leu Asp Pro Ser Glu Glu Tyr		
	485	490
Lys Leu Leu Trp Pro Ile Asp Val Asp Val Met Ser Val Asn Pro Leu		
	500	505
Leu Lys Gln Thr Pro Gly Tyr Glu Lys		
	515	520

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 <211> 64
 <212> PRT
 <213> B.fragilis

<400> 9526
His Thr Glu Asn Arg Lys Ala Lys Ile Glu Leu Arg Leu Phe Ser Trp
1 5 10 15
Tyr Arg Leu Ile Asn Ile Tyr Val Ile Gly Ser Lys Asp Ser Ile Phe
20 25 30
Tyr Tyr Ile Thr Val Met Leu Ile Lys Tyr Phe Ile Ile Tyr Gly Arg
35 40 45
Phe Asn Lys Gln Asp Thr Ile Arg Arg Lys Ala Leu Asn His Arg Lys
50 55 60

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 <211> 673
 <212> PRT
 <213> B.fragilis

<400> 9527
Ser Ile Met Lys Leu Lys Ile Lys Asn Leu Phe Val Gln Ala Cys Phe
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Val Ala Gly Gly Val Met Ala Leu Thr Ser Cys Asn Asp Phe Leu Asp
20 25 30
Arg Glu Pro Leu Ser Ser Val Thr Pro Glu Val Tyr Phe Gln Thr Val
35 40 45
Asp His Phe Ala Ala Tyr Ser Ile Ala Arg Tyr Gln Asn Tyr Phe Pro
50 55 60
Ser His Gly Gly Tyr Gly Ala Gly Ile Ala Asn Asp Gly Gly Thr
65 70 75 80
Asp Asn Met Val Ala Gly Gly Arg Ser Ser Arg Tyr Val Lys Gly Leu
85 90 95
Trp Lys Val Pro Ser Ser Asp Gly Asn Trp Ser Phe Ser Asn Ile Arg
100 105 110
Tyr Cys Asn Tyr Phe Phe Glu Asn Ala Val Pro Lys Tyr Glu Ala Gly
115 120 125

Glu	Val	Ala	Gly	Ala	Asp	Ala	Asp	Ile	Arg	His	Tyr	Ile	Gly	Glu	Met
130						135					140				
His	Leu	Met	Arg	Ala	Leu	Val	Tyr	Tyr	Asn	Leu	Leu	Arg	Thr	Tyr	Gly
145					150					155					160
Asp	Phe	Pro	Ile	Val	Thr	Glu	Val	Leu	Pro	Asp	Asp	Lys	Thr	Val	Leu
				165					170					175	
Met	Glu	Lys	Gly	Val	Arg	Gln	Pro	Arg	Asn	Leu	Val	Ala	Arg	Phe	Ile
			180					185					190		
Leu	Lys	Asp	Leu	Asp	Asp	Ala	Ala	Asn	Met	Met	Tyr	Ser	Lys	Gly	Phe
		195				200					205				
Lys	Asn	Asn	Thr	Arg	Leu	Asn	Arg	Glu	Thr	Ala	Leu	Leu	Ile	Lys	Ser
	210				215						220				
Arg	Val	Ala	Leu	Tyr	Glu	Ala	Ser	Phe	Glu	Arg	Tyr	His	Lys	Gly	Thr
225				230						235					240
Gly	Arg	Val	Pro	Gly	Asp	Asp	Asn	Trp	Pro	Gly	Lys	Lys	Val	His	Ser
			245					250						255	
Asn	Phe	Ser	Leu	Asp	Val	Glu	Ala	Glu	Val	Asp	Phe	Phe	Leu	Thr	Glu
			260					265					270		
Ala	Met	Lys	Ala	Ala	Glu	Glu	Val	Ala	Asp	Lys	Ile	Thr	Leu	Thr	Pro
		275				280						285			
Asn	Thr	Lys	Val	Glu	Asp	Pro	Ala	Ser	Pro	Ser	Ile	Thr	Ser	Gly	Trp
	290				295						300				
Asn	Pro	Tyr	Phe	Glu	Met	Tyr	Ala	Asn	Val	Asp	Leu	Ser	Gly	Tyr	Asp
305				310						315					320
Glu	Val	Leu	Phe	Trp	Arg	Gln	Tyr	Ala	Lys	Thr	Gly	Ser	Phe	Ser	Ile
			325					330						335	
Met	His	Gly	Thr	Pro	Ala	Trp	Ile	Ala	Ser	Gly	Ser	Asn	His	Gly	Leu
			340					345					350		
Leu	Lys	Ser	Tyr	Val	Glu	Ser	Phe	Leu	Met	Gln	Asp	Gly	Leu	Pro	Trp
		355				360					365				
Tyr	Ala	Ala	Ser	Ser	Ala	Ala	Pro	Tyr	Lys	Gly	Asp	Ala	Thr	Leu	Asp
	370				375						380				
Asp	Val	Lys	Ala	Asn	Arg	Asp	Asn	Arg	Leu	Gln	Leu	Phe	Met	Phe	Gly
385				390						395					400
Glu	Ser	Asn	Phe	Val	Pro	Val	Tyr	Ser	Thr	Glu	Glu	Pro	Gly	Thr	Val
			405						410					415	
Lys	Met	Phe	Ala	Pro	His	Pro	Val	Ser	Asn	Arg	Glu	Glu	Met	Arg	Asp
			420					425					430		
Gln	Thr	Gly	Tyr	Arg	Ile	Arg	Lys	Tyr	Ala	Ser	Phe	Asp	Met	Ala	Gln
	435					440						445			
Asn	Val	Trp	Gly	Lys	Ala	Glu	Ser	Thr	Thr	Gly	Cys	Ile	Ile	Tyr	Arg
	450				455						460				
Gly	Val	Glu	Ala	Tyr	Leu	Asn	Tyr	Leu	Glu	Ala	Tyr	Tyr	Met	Lys	Asn
465				470						475					480
Gly															

		595					600					605					
Lys	Tyr	Leu	Arg	Pro	Tyr	Ala	Ile	Leu	Lys	Thr	Asn	Asn	Asp	Val	Tyr		
	610					615					620						
Asp	Gly	Tyr	Thr	Trp	Gln	Lys	Ala	His	Tyr	Leu	Asn	Pro	Val	Pro	Val		
625					630					635					640		
Arg	Glu	Met	Glu	Leu	Leu	Ser	Pro	Asp	Glu	Lys	Ala	Glu	Thr	Ser	Val		
			645						650					655			
Leu	Tyr	Gln	Asn	Pro	Tyr	Trp	Ser	Thr	Lys	Ile	Gly	Glu	Val	Ala	Glu		
			660					665					670				
Glu																	

<210> 9528
 <211> 209
 <212> PRT
 <213> B.fragilis

Lys	Arg	Met	Lys	Lys	Ile	Leu	Leu	Met	Met	Leu	Leu	Leu	Ala	Ser	Met		
1			5					10					15				
Ala	Ser	Asn	Ala	Gln	Glu	Arg	Lys	Tyr	Ser	Thr	Phe	Tyr	Tyr	Gln	Arg		
		20					25					30					
Ala	Thr	Leu	Phe	Glu	Glu	Leu	Pro	Val	Thr	Ser	Lys	Asp	Ile	Ile	Phe		
		35					40				45						
Leu	Gly	Asn	Ser	Ile	Thr	Asn	Gly	Gly	Glu	Trp	Ser	Glu	Leu	Leu	Asn		
	50					55				60							
Asn	Lys	His	Val	Lys	Asn	Arg	Gly	Ile	Ser	Gly	Asp	Ile	Cys	Met	Gly		
65				70					75					80			
Val	Tyr	Asp	Arg	Leu	Asp	Ala	Ile	Leu	Lys	Gly	Lys	Pro	Ala	Lys	Ile		
			85					90				95					
Phe	Leu	Leu	Ile	Gly	Ile	Asn	Asp	Val	Ser	Arg	Gly	Thr	Ser	Ala	Asp		
			100					105				110					
Thr	Ile	Val	Asn	Arg	Ile	Gly	Met	Ile	Thr	Gln	Lys	Ile	Lys	Gln	Asp		
		115					120					125					
Ser	Pro	Lys	Thr	Lys	Leu	Tyr	Leu	Gln	Ser	Val	Leu	Pro	Val	Thr	Asp		
	130					135					140						
His	Tyr	Lys	Met	Phe	Gly	Gly	His	Thr	Ser	Arg	Trp	Gln	Glu	Val	Lys		
145					150					155					160		
Lys	Ile	Asn	Glu	Gly	Leu	Met	Tyr	Leu	Ala	Asp	Lys	Glu	Asn	Val	Thr		
			165						170					175			
Tyr	Ile	Asp	Leu	Tyr	Ser	His	Phe	Val	Asp	Glu	Lys	Thr	Gly	Lys	Met		
		180						185					190				
Asn	Ile	Glu	Tyr	Thr	Asn	Asp	Gly	Leu	His	Leu	Leu	Gly	Lys	Gly	Tyr		
		195					200					205					
Leu																	

<210> 9529
 <211> 1093
 <212> PRT
 <213> B.fragilis

Lys	Ala	Ile	Leu	Met	Lys	Lys	Thr	Ile	Phe	Leu	Ile	Leu	Cys	Ile	Leu		
1			5					10					15				
Cys	Ser	Leu	Gly	Ala	Met	Ala	Gln	Lys	Lys	Ser	Ile	Thr	Gly	Val	Ile		
		20					25					30					
Thr	Asp	Gly	Ala	Gly	Glu	Ser	Ile	Ile	Gly	Ala	Ser	Val	Val	Glu	Val		
		35					40					45					

Gly	Thr	Thr	Asn	Gly	Thr	Ile	Thr	Asp	Phe	Asp	Gly	Lys	Phe	Ser	Leu
50						55					60				
Thr	Ile	Ala	Thr	Gly	Ala	Lys	Phe	Thr	Val	Ser	Tyr	Ile	Gly	Tyr	Lys
65						70					75				80
Ser	Gln	Thr	Ile	Thr	Val	Gly	Ala	Glu	Asn	Thr	Tyr	Asn	Ile	Val	Leu
				85						90				95	
Lys	Glu	Asp	Thr	Glu	Val	Leu	Asp	Glu	Val	Val	Ile	Thr	Gly	Tyr	Gly
			100					105					110		
Gly	Ser	Gln	Lys	Arg	Ala	Thr	Leu	Thr	Thr	Ala	Ile	Ser	Lys	Leu	Asp
			115					120					125		
Asn	Ser	Val	Leu	Lys	Asn	Ala	Ala	Phe	Ser	Asn	Ala	Gly	Gln	Ser	Leu
			130				135					140			
Gln	Gly	Ser	Val	Thr	Gly	Leu	Arg	Val	Val	Asn	Lys	Thr	Gly	Gln	Pro
145						150					155				160
Gly	Ser	Glu	Pro	Asp	Ile	Thr	Leu	Arg	Gly	Gly	Ala	Thr	Ile	Thr	Gly
				165					170						175
Asp	Asn	Ser	Lys	Ala	Leu	Ile	Val	Val	Asp	Gly	Ile	Val	Arg	Asn	Ser
			180						185				190		
Met	Ser	Asp	Ile	Asn	Pro	Ser	Asp	Ile	Glu	Ser	Ile	Gln	Val	Leu	Lys
		195					200					205			
Asp	Ala	Ala	Ser	Thr	Ala	Ile	Tyr	Gly	Ala	Arg	Ala	Asn	Gly	Gly	Val
		210					215					220			
Ile	Leu	Val	Glu	Thr	Lys	Ser	Gly	Lys	Glu	Gly	Lys	Ala	Ser	Val	Asn
225						230					235				240
Tyr	Lys	Phe	Lys	Met	Gly	Val	Asn	Phe	Ala	Arg	Lys	Gly	Tyr	Asp	Phe
				245						250				255	
Cys	Asp	Ala	His	Asp	Tyr	Ile	Tyr	Tyr	Asn	Arg	Leu	Gly	Tyr	Lys	Arg
			260						265				270		
Thr	Gly	Arg	Thr	Asn	Val	Asp	Thr	Gln	Met	Gly	Tyr	Gly	Ile	Gly	Asn
		275						280					285		
Asn	Leu	Phe	Asp	Ile	Arg	Tyr	Leu	Thr	Asp	Glu	Asn	Ala	Asn	Leu	Lys
		290					295					300			
Asn	Glu	Gly	Trp	Ala	Ser	Met	Ala	Asp	Pro	Phe	Tyr	Asp	Gly	Lys	Thr
305						310					315				320
Ile	Leu	Tyr	Lys	Asp	Tyr	Ser	Gly	Glu	Leu	Asp	Asp	Val	Val	Phe	Asn
				325						330				335	
Asn	Ser	Ala	Leu	Thr	Gln	Asp	His	Tyr	Val	Asn	Ile	Thr	Gly	Gly	Asn
			340					345					350		
Asp	Lys	Gly	Thr	Phe	Ser	Ala	Ser	Leu	Gly	Tyr	Tyr	Lys	Glu	Asp	Gly
		355						360					365		
Gln	Ile	Arg	Gly	Thr	Gly	Tyr	Glu	Arg	Phe	Asn	Gly	Ala	Leu	Asn	Gly
		370					375					380			
Ser	Tyr	Lys	Val	Phe	Pro	Phe	Leu	Thr	Val	Lys	Ala	Asn	Ala	Thr	Tyr
385						390					395				400
Ser	Trp	Ser	Thr	Gln	Pro	Glu	Leu	Trp	Ile	Gly	Gln	Tyr	Glu	Phe	Phe
				405						410				415	
Tyr	Arg	Thr	Arg	Ser	Gln	Arg	Pro	Thr	Trp	Asn	Pro	Trp	Asn	Glu	Asp
			420						425				430		
Gly	Thr	Pro	Ala	Ser	Gly	Phe	Gly	Thr	Gly	Asp	Gly	Asn	Pro	Asp	Tyr
		435						440					445		
Tyr	Arg	Asp	Lys	Leu	Thr	Ser	Glu	Asn	Ser	Thr	Asn	Lys	Ser	Thr	Tyr
		450					455					460			
Ser	Val	Gly	Phe	Ala	Leu	Asp	Ile	Leu	Pro	Lys	Lys	Leu	Val	Leu	Asn
465						470					475				480
Gly	Asn	Ala	Ser	Leu	Tyr	Arg	Tyr	Asp	Trp	Gln	Arg	Glu	Lys	Phe	Asn
				485					490					495	
Lys	Ser	Tyr	Gln	Ala	Gln	Ser	Ser	Ala	Thr	Pro	Asp	Asn	Thr	Arg	Gln
			500					505					510		
Ala	Glu	Ala	Tyr	Val	Gln	Lys	Tyr	Asn	Gln	Ile	Gln	Leu	Asn	Gly	Thr

Leu	Thr	Tyr	Thr	Asp	Thr	Phe	Ala	Glu	Lys	His	Asn	Leu	Glu	Ala	Met
530						535					540				
Leu	Gly	Thr	Glu	Tyr	Phe	Thr	Tyr	Asp	Gln	Phe	Asp	Phe	Glu	Ala	Lys
545					550					555					560
Thr	Gln	Asn	Ser	Pro	Thr	Asp	Asp	Ile	Pro	Thr	Leu	Asn	Ala	Gly	Ser
				565					570						575
Thr	Arg	Thr	Tyr	Thr	Ser	Thr	Thr	Lys	Thr	Ala	Tyr	Arg	Ile	Leu	Ser
				580				585							590
Gly	Phe	Gly	Arg	Ile	Asn	Tyr	Asn	Tyr	Asp	Met	Arg	Tyr	Leu	Ile	Ser
				595			600					605			
Phe	Val	Ala	Arg	Tyr	Asp	Gly	Ile	Ser	Lys	Leu	Lys	Asp	Asn	Arg	Trp
610						615					620				
Gly	Phe	Phe	Pro	Gly	Val	Ser	Val	Gly	Trp	Asn	Ile	Met	Glu	Glu	Arg
625					630					635					640
Phe	Trp	Lys	Asp	Ser	Lys	Ile	Ser	Gly	Val	Ile	Ser	Asn	Leu	Lys	Pro
				645					650						655
Arg	Leu	Ser	Tyr	Gly	Val	Asn	Gly	Asn	Val	Asn	Gly	Ile	Gly	Asn	Phe
				660				665							670
Asp	Val	Tyr	Gly	Ala	Tyr	Ser	Gln	Val	Gly	Ala	Lys	Thr	Tyr	Gly	Gly
				675			680					685			
Ser	Thr	Ala	Phe	Tyr	Asn	Ser	Gly	Leu	Val	Asn	Thr	Gly	Leu	Arg	Trp
690						695					700				
Glu	Gln	Ser	Gln	Ser	Phe	Glu	Ala	Gly	Leu	Asp	Ile	Gly	Phe	Leu	Asn
705					710					715					720
Asn	Arg	Leu	Ser	Phe	Ile	Leu	Asp	Tyr	Tyr	Asn	Arg	Thr	Thr	Lys	Asp
				725					730						735
Leu	Leu	Thr	Lys	Gln	Ala	Leu	Pro	Gly	Tyr	Thr	Gly	Phe	Thr	Glu	Ile
				740				745							750
Met	Thr	Asn	Met	Gly	Thr	Leu	Arg	Asn	Tyr	Gly	Phe	Glu	Met	Glu	Val
				755			760					765			
Arg	Ala	Asn	Ile	Leu	Asn	Asn	Pro	Lys	Gly	Leu	Thr	Trp	Asp	Val	Thr
770						775					780				
Ala	Asn	Leu	Ser	Ser	Val	Ala	Asn	Lys	Ile	Val	Lys	Leu	Pro	Tyr	Asn
785					790					795					800
Gly	Asn	Pro	Asn	Asn	Arg	Val	Gly	Gly	Tyr	Glu	Val	Ala	Thr	Gly	Arg
				805					810						815
Lys	Lys	Ala	Asp	Gly	Thr	Asp	Glu	Thr	Lys	Trp	Ile	Ala	Gly	Arg	Gln
				820				825							830
Glu	Gly	Gly	Lys	Leu	Gly	Glu	Leu	Val	Ala	Tyr	Lys	Gln	Asn	His	Ile
				835			840					845			
Phe	Lys	Asp	Trp	Asp	Asp	Val	Lys	Lys	Tyr	Ala	Asn	Asn	Arg	Ile	Asp
850						855					860				
Glu	Val	Ala	Asn	Leu	Tyr	Gly	Pro	Gly	Leu	Ala	Ala	Gln	Tyr	Ala	Gly
865					870					875					880
Lys	Glu	Gly	Trp	Gln	Pro	Ile	Glu	Pro	Gly	Asp	Val	Cys	Trp	Glu	Asp
				885					890						895
Ile	Asn	Gly	Asp	Gly	Val	Ile	Asn	Gly	Tyr	Asp	Arg	Gln	Val	Val	Gly
				900				905							910
Asn	Ile	Phe	Pro	Lys	Val	Thr	Gly	Gly	Phe	Ser	Thr	Thr	Leu	Gly	Tyr
				915			920					925			
Lys	Asn	Leu	Ser	Leu	Tyr	Ala	Arg	Phe	Asp	Tyr	Ala	Leu	Gly	His	Thr
930						935					940				
Ile	Tyr	Asn	Asp	Leu	Ala	Ala	Arg	Ser	Leu	Gly	Gln	Tyr	Gln	Gly	Ser
945					950					955					960
Phe	Asn	Ile	Ile	Lys	Glu	Val	Lys	Lys	Thr	Trp	Ser	Glu	Thr	Asn	Thr
				965					970						975
Asp	Thr	Asp	Leu	Pro	Ala	Phe	Tyr	Tyr	Ala	Asp	Gln	Leu	Ser	Lys	Lys
				980				985							990

Asn Ile Thr Arg Ser Asn Asn Gly Leu Thr Ala Ile Asp Asn Asn Ser
 995 1000 1005
 Ser Arg Phe Tyr Glu Lys Gly Asp Tyr Leu Ala Leu Arg Glu Leu Thr
 1010 1015 1020
 Leu Asn Tyr Asn Leu Pro Lys Thr Trp Ile Ser Lys Val Gly Met Thr
 1025 1030 1035 1040
 Asp Ala Ser Val Tyr Val Thr Gly Gln Asn Leu Phe Tyr Ile Thr Gly
 1045 1050 1055
 Tyr Thr Gly Val Ser Pro Glu Pro Ala Val Asp Thr Thr Tyr Gly Arg
 1060 1065 1070
 Gly Ile Asp Asn Gly Arg Tyr Pro Thr Pro Arg Thr Val Leu Phe Gly
 1075 1080 1085
 Leu Ser Val Thr Phe
 1090

<210> 9530

<211> 434

<212> PRT

<213> B.fragilis

<400> 9530

Gly Leu Ile Arg Arg Leu Leu Glu Pro Pro Val Lys Thr Asp Lys Lys
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 Thr Leu Met Gly Asn Gly Asn Phe Thr Gly Thr Glu Ile Tyr Asp Tyr
 20 25 30
 His Arg Lys Met Tyr Gly Glu Asp Phe Thr Tyr Ala Asp Phe Ala Pro
 35 40 45
 Met Phe Lys Ala Leu Ser Tyr Asp Pro Glu Glu Trp Ala Asp Leu Phe
 50 55 60
 Glu His Ser Gly Ala Lys Tyr Val Val Leu Thr Thr Lys His His Asp
 65 70 75 80
 Gly Phe Ala Leu Trp Pro Ser Arg Glu Ala Ser Ile Ser Tyr Gly Arg
 85 90 95
 Pro Trp Asn Ser Met Glu Ile Gly Ala His Arg Asp Leu Val Gly Glu
 100 105 110
 Tyr Val Asn Ala Leu Arg Lys Thr Asp Ile Lys Val Gly Cys Tyr Phe
 115 120 125
 Ser Leu Arg Glu Trp Asp Asn Pro Leu Tyr Asn Lys Glu Thr Met Asp
 130 135 140
 Leu Phe Tyr Glu Arg His Trp Phe Pro Gln Leu Gln Asp Leu Val Asn
 145 150 155 160
 Arg Tyr Lys Pro Asp Leu Ile Trp Ala Asp Gly Pro Asp Gln Ile Asn
 165 170 175
 Asp Lys Gln Trp Gln Ala Glu Arg Thr Leu Ala Trp Leu Tyr Ser Glu
 180 185 190
 Ser Pro Val Lys Asp Ser Ile Val Val Asn Asp Arg Trp Ala Asn Asn
 195 200 205
 Thr Gly Lys Lys His Gly Asp Tyr Tyr Thr Arg Glu Tyr Ser Asn Thr
 210 215 220
 Asn Ser Ser Tyr Asn Lys Pro Trp Glu Glu Cys Arg Gly Ile Gly Leu
 225 230 235 240
 Ser Phe Gly Tyr Asn Gln Asn Glu Asp Leu Gly Asp Tyr Thr Ser Pro
 245 250 255
 Lys Ala Leu Ile Leu Thr Leu Val Asn Ile Val Ser Gln Gly Gly Asn
 260 265 270
 Leu Leu Leu Asp Ile Gly Pro Asn Ala Asn Gly Lys Ile Pro Pro Ile
 275 280 285
 Met Gln Glu Arg Leu Leu Gln Ile Gly Lys Trp Leu Lys Val Asn Gly
 290 295 300

Glu Ala Ile Tyr Gly Thr Arg Ala Trp Gly Asn Phe Cys Gln Trp Ser
 305 310 315 320
 Lys Gly Ser Lys Glu Trp Lys Ser Lys Glu Lys His Tyr Val Ser Gly
 325 330 335
 Asp Ala Ile Leu Lys Gln Thr Val Asp Pro Asp Pro Gly Tyr Ala Val
 340 345 350
 Lys Glu Val Phe Phe Thr Lys Lys Gly Asn Asn Val Tyr Ala Ile Leu
 355 360 365
 Pro Arg Tyr Pro Lys Asn Lys Ile Val Leu Lys Asp Ile Gln Thr Thr
 370 375 380
 Gly Arg Thr Lys Ile Thr Leu Leu Gly Ser Asp Lys Lys Val Gln Trp
 385 390 395 400
 Lys Gln Lys Gly Asn Asp Ile Glu Val Ile Met Pro Leu Leu Tyr Val
 405 410 415
 Asp Glu Leu Pro Cys Asp Tyr Ala Trp Val Leu Lys Leu Glu Lys Ile
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 Ser Glu

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<211> 672

<212> PRT

<213> B.fragilis

<400> 9531

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 Leu Cys Thr Ile Ser Ser Val Arg Ala Gly Glu Tyr His Leu Leu Pro
 20 25 30
 Glu Pro Gln Lys Phe Thr Pro Leu Gly Ser Ser Phe Val Leu Gly Arg
 35 40 45
 Thr Lys Leu Ser Thr Pro Val Leu Arg Gln Glu Trp Glu Ala Phe Val
 50 55 60
 Val Asp Arg Gly Gly Val Ile Asp Asp Lys Ala Arg Ala Ser Ile Glu
 65 70 75 80
 Val Lys Leu Val Pro Ser Leu Glu Glu Val Pro Leu Asn Ala Asp Glu
 85 90 95
 Ala Tyr Arg Leu Val Val Asn Asn Gly Lys Val Thr Val Glu Ala Val
 100 105 110
 Thr Glu His Gly Val Tyr Trp Ala Met Gln Thr Leu Ala Gln Leu Gln
 115 120 125
 Asp Val Gln Lys Lys Lys Ala Thr Phe Asn Gly Cys Ser Ile Val Asp
 130 135 140
 Trp Pro Ala Phe Arg Ile Arg Gly Phe Met Gln Asp Val Gly Arg Thr
 145 150 155 160
 Tyr Met Ser Ile Glu Glu Leu Lys Arg Glu Ile Ala Val Leu Ser Arg
 165 170 175
 Phe Lys Ile Asn Val Phe His Trp His Leu Thr Glu Asn Gln Ser Trp
 180 185 190
 Arg Leu Gln Ser Lys Ile Phe Pro Met Leu Asn Asp Ser Val Asn Thr
 195 200 205
 Thr Arg Met Pro Gly Lys Tyr Tyr Thr Leu Glu Glu Ala Lys Asp Leu
 210 215 220
 Val Ala Phe Cys Lys Ala His Asn Ile Leu Leu Ile Pro Glu Phe Asp
 225 230 235 240
 Met Pro Gly His Ser Gly Ala Phe Val Arg Thr Phe Arg His Asp Met
 245 250 255
 Gln Ser Pro Glu Gly Met Lys Ile Leu Lys Leu Leu Val Asp Glu Val
 260 265 270

Cys Glu Thr Phe Asp Val Pro Tyr Leu His Ile Gly Thr Asp Glu Val
 275 280 285
 Arg Phe Thr Asn Pro Lys Phe Val Pro Glu Met Val Glu Tyr Val Arg
 290 295 300
 Ala Lys Gly Lys Lys Val Ile Ser Trp Asn Pro Gly Trp His Tyr Lys
 305 310 315 320
 Pro Gly Glu Ile Asp Met Thr His Leu Trp Ser Tyr Arg Gly Lys Ala
 325 330 335
 Gln Lys Gly Ile Pro Ala Ile Asp Ser Lys Phe His Tyr Leu Asn His
 340 345 350
 Phe Asp Thr Phe Gly Asp Ile Ile Ala Leu Tyr Asn Ser Arg Ile Tyr
 355 360 365
 Asn Val Glu Gln Gly Ser Asp Asp Ile Ala Gly Thr Ile Leu Ala Ile
 370 375 380
 Trp Asn Asp Arg Tyr Val Ala Asn Glu Arg Asn Ile Ile Leu Glu Asn
 385 390 395 400
 Asn Phe Tyr Pro Asn Met Leu Ala Ile Ala Glu Arg Ala Trp Lys Gly
 405 410 415
 Gly Gly Thr Glu Tyr Phe Asp Lys Asn Gly Thr Ile Leu Pro Ser Glu
 420 425 430
 Gly Ser Pro Glu Phe Lys Glu Phe Ala Asp Phe Glu Asn Arg Met Leu
 435 440 445
 Trp His Lys Glu His Thr Phe Lys Gly Tyr Pro Phe Ala Tyr Val Lys
 450 455 460
 Gln Thr Asn Val Lys Trp Asn Ile Thr Asp Ala Phe Pro Asn Gly Gly
 465 470 475 480
 Asp Leu Asn Lys Val Phe Pro Pro Glu Gln Glu Leu Lys Asp Ser Tyr
 485 490 495
 Leu Tyr Glu Gly Lys Glu Tyr Gly Val His Pro Ala Ile Gly Ala Gly
 500 505 510
 Ile Tyr Leu Arg His Val Trp Gly Lys Met Val Pro Thr Phe Tyr Lys
 515 520 525
 Asp Pro Gln Glu Asn His Thr Ala Tyr Ala Tyr Thr Trp Val Tyr Ser
 530 535 540
 Pro Lys Asp Gln Glu Val Gly Leu Trp Ala Glu Phe Gln Asn Tyr Gly
 545 550 555 560
 Arg Ser Glu Met Asp Leu Ala Pro Leu Gln Gly Lys Trp Asp Tyr Lys
 565 570 575
 Gly Ser Arg Ile Trp Ile Asn Asn Glu Glu Ile Gln Pro Pro Val Trp
 580 585 590
 Thr Ala Thr His Arg Thr Lys Ser Asn Glu Ile Ala Leu Gly Asn Glu
 595 600 605
 Asn Cys Val Ala Arg Pro Pro Ile Ala Val His Leu Asn Lys Gly Trp
 610 615 620
 Asn Lys Val Phe Leu Lys Leu Pro Val Gly Lys Phe Asn Met Pro Glu
 625 630 635 640
 Val Arg Leu Val Lys Trp Met Phe Thr Thr Val Phe Val Thr Pro Asp
 645 650 655
 Gly Glu Asn Ala Val Asp Gly Leu Ile Tyr Ser Pro Asp Lys Thr Lys
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<210> 9532

<211> 71

<212> PRT

<213> B.fragilis

<400> 9532

Ala Lys Asn Gly Glu Lys Arg Lys Phe Cys Glu Tyr Phe Gln Thr Ser
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<210> 9533
<211> 518
<212> PRT
<213> B.fragilis
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Thr	Gly	Phe	Ile	Ser	Ser	Cys	Asn	Asp	Lys	Glu	Thr	Thr	Ala	Asn	Tyr
			20					25					30		
Gln	Val	Ile	Pro	Leu	Pro	Gln	Glu	Ile	Thr	Thr	Ala	Gln	Ser	Gln	Pro
		35					40					45			
Phe	Thr	Leu	Asn	Gly	Ser	Val	Lys	Ile	Ile	Tyr	Pro	Glu	Gly	Asn	Glu
	50					55					60				
Lys	Met	Gln	Arg	Asn	Ala	Gln	Phe	Leu	Ala	Asp	Tyr	Leu	Lys	Lys	Ala
65					70					75					80
Thr	Gly	Lys	Asp	Tyr	Ala	Val	Glu	Ala	Gly	Thr	Glu	Gly	Lys	Gly	Ala
				85					90					95	
Ile	Leu	Leu	Lys	Leu	Gly	Met	Glu	Ser	Glu	Asn	Pro	Glu	Ala	Tyr	Gln
			100					105					110		
Leu	Ser	Val	Asn	Ala	Asp	Gly	Val	Thr	Ile	Ala	Ala	Pro	Thr	Glu	Ala
		115					120					125			
Gly	Val	Phe	Tyr	Gly	Ile	Gln	Thr	Leu	Arg	Lys	Ser	Ile	Pro	Val	Ala
		130				135					140				
Ile	Gly	Thr	Thr	Pro	Ser	Leu	Pro	Ala	Val	Glu	Ile	Ser	Asp	Tyr	Pro
145					150					155					160
Arg	Phe	Ser	Tyr	Arg	Gly	Ala	His	Phe	Asp	Val	Gly	Arg	His	Phe	Phe
				165					170					175	
Thr	Val	Asp	Glu	Val	Lys	Thr	Tyr	Ile	Asp	Met	Met	Ala	Leu	His	Asn
			180					185					190		
Met	Asn	Arg	Leu	His	Trp	His	Leu	Thr	Glu	Asp	Gln	Gly	Trp	Arg	Leu
		195					200					205			
Glu	Ile	Lys	Lys	Tyr	Pro	Lys	Leu	Thr	Glu	Ile	Gly	Ser	Lys	Arg	Ser
	210					215					220				
Glu	Thr	Val	Ile	Gly	Arg	Asn	Ser	Gly	Glu	Tyr	Asp	Gly	Lys	Pro	Tyr
225					230					235				240	
Gly	Gly	Phe	Tyr	Thr	Gln	Glu	Glu	Ala	Arg	Glu	Ile	Val	Ala	Tyr	Ala
				245					250					255	
Ala	Asp	Arg	Tyr	Ile	Thr	Val	Ile	Pro	Glu	Ile	Asp	Leu	Pro	Gly	His
			260					265					270		
Met	Gln	Gly	Ala	Leu	Ala	Ala	Tyr	Pro	His	Leu	Gly	Cys	Thr	Gly	Gly
		275					280					285			
Pro	Tyr	Glu	Val	Trp	Lys	Ile	Trp	Gly	Val	Ser	Asp	Gln	Val	Leu	Cys
	290					295					300				
Ala	Gly	Asn	Asp	Ser	Val	Leu	Thr	Phe	Ile	Asp	Asp	Val	Leu	Thr	Glu
305					310					315					320
Val	Met	Asp	Ile	Phe	Pro	Ser	Glu	Tyr	Ile	His	Val	Gly	Gly	Asp	Glu
				325					330					335	
Cys	Pro	Lys	Thr	Glu	Trp	Ala	Lys	Cys	Pro	Lys	Cys	Gln	Ala	Arg	Ile
			340					345					350		

[illegible]

<400> 9534

Lys 1	Ile	Asn	Ile	Val 5	Thr	Asn	Met	Lys	Lys 10	Ile	Thr	Ser	Ile	Leu 15	
Phe	Leu	Ser	Ala	Leu	Leu	Tyr	Val	Ser	Cys	Asp	Ala	Leu	Asp	Leu	Ser
			20					25					30		
Pro	Glu	Asp	Tyr	Tyr	Gly	Ser	Gly	Asn	Phe	Trp	Thr	Lys	Glu	Ala	Gln
		35					40					45			
Val	Glu	Gly	Tyr	Met	Asn	Gly	Leu	His	Asn	Asn	Leu	Arg	Ser	Ser	Tyr
	50					55					60				
Thr	Met	Phe	Tyr	Val	Leu	Gly	Glu	Ala	Arg	Gly	Gly	Thr	Ser	Arg	Tyr
65				70						75				80	
Gly	Thr	Ser	Ser	Leu	Gly	Thr	Ser	Met	Ser	Tyr	Ser	Asp	Pro	Ile	Lys
				85					90					95	
Asn	Asn	Met	Leu	Thr	Lys	Asp	Asn	Thr	Gly	Ile	Ser	Asn	Trp	Tyr	Asp
			100					105					110		
Leu	Tyr	Gly	Arg	Ile	Met	Gln	Val	Asn	His	Phe	Ile	Ser	Glu	Val	Ser
		115					120					125			
Asn	Gly	Cys	Ser	Phe	Leu	Ser	Glu	Ser	Lys	Lys	Gly	Phe	Tyr	Leu	Gly
	130					135					140				
Gln	Ala	Tyr	Gly	Leu	Arg	Ala	Leu	Tyr	Tyr	Phe	Met	Leu	Tyr	Lys	Thr
145				150						155				160	
Tyr	Gly	Gly	Val	Pro	Leu	Ile	Thr	Asp	Val	Lys	Val	Leu	Glu	Gly	Gly
				165					170					175	
Lys	Ile	Ser	Ala	Asp	Ala	Leu	Tyr	Thr	Glu	Arg	Ser	Thr	Pro	Glu	Thr
			180					185					190		
Ile	Leu	Lys	Phe	Ile	Lys	Ser	Asp	Leu	Glu	Ala	Ser	Glu	Leu	Asn	Phe
		195					200					205			
Gly	Asn	Asn	Val	Thr	Ile	Asp	Arg	Ala	Met	Trp	Thr	Lys	Tyr	Ala	Thr
	210					215					220				
Leu	Met	Leu	Lys	Ala	Glu	Val	Tyr	Met	Trp	Ser	Ala	Lys	Val	Thr	Thr
225				230						235					240

Gly Asp His Gln Ala Thr Gly Asn Ser Asp Leu Ala Ile Ala Gln Thr
 245 250 255
 Ala Leu Gln Pro Leu Ile Asn Gln Phe Ser Leu Leu Asp Asn Phe Ser
 260 265 270
 Glu Val Phe Ser Lys Lys Ala Asn Asp Glu Ile Ile Phe Ala Ile Arg
 275 280 285
 Phe Lys Asp Gly Glu Ala Thr Asn Trp Ala Gly Pro Phe Ile Tyr Tyr
 290 295 300
 Gly Asn Ile Phe Glu Gly Gln Arg Tyr Gly Arg Asp Gly Lys Leu Met
 305 310 315 320
 Gln Asp Thr Leu Asp Leu Lys Gly Thr Val Gly Gln Phe Leu His Glu
 325 330 335
 Tyr Lys Lys Ala Leu Trp Asp Ser Tyr Asp Asp Glu Asp Met Arg Arg
 340 345 350
 Asp Ala Thr Phe Met Asp His Tyr Gly Ser Ala Gln Lys Glu Gly Phe
 355 360 365
 Gly Ile Ala Met Lys Lys Gly Ile Gly Ser Val Asn Ser Asn Asn Gln
 370 375 380
 Arg Ile Phe Asp Thr Asp Ile Ile Val Tyr Arg Tyr Ala Asp Val Leu
 385 390 395 400
 Leu Met Met Ala Glu Ile Glu Asn Ala Leu Ser Gly Lys Cys Ala Asn
 405 410 415
 Tyr Val Asn Glu Val Arg Lys Arg Ala Tyr Gly Lys Asn Trp His Pro
 420 425 430
 Gln Phe Ala Tyr Thr Asp Gly Ser Tyr Ala Asp Asn Glu Leu Thr Ile
 435 440 445
 Leu His Glu Arg Asp Lys Glu Phe Val Trp Glu Gly Lys Arg Trp Phe
 450 455 460
 Asp Val Val Arg Met His Asp Ala Asn Gly Lys Ser Leu Ala Phe Ser
 465 470 475 480
 Val Ala Ala Asn Tyr Pro Asn Asn Glu Thr Pro Asp Glu Arg Val Pro
 485 490 495
 Leu Ile Lys Glu Ser Glu Ala His Lys Leu Leu Trp Pro Ile Asp Val
 500 505 510
 Asn Thr Leu Asn Asn Asp Pro Lys Leu Glu Gln Thr Pro Gly Tyr Asp
 515 520 525
 Lys

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<211> 173

<212> PRT

<213> B.fragilis

<400> 9535

Ser Phe Met Ile Ile Leu Ile Ala Gly Asp Thr His Thr Gly Lys Thr
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 Ile Leu Ala Gln Lys Leu Leu Glu Lys Tyr Lys Tyr Pro Tyr Leu Ser
 20 25 30
 Ile Asp His Leu Lys Met Gly Leu Ile Arg Ser Gly Gln Cys Lys Leu
 35 40 45
 Ser Ala Asp Ser Asn Asp Met Glu Leu Thr Asn Tyr Leu Trp Pro Ile
 50 55 60
 Val Arg Glu Met Ile Lys Thr Cys Ile Glu Asn Ser Gln Asn Met Ile
 65 70 75 80
 Ile Glu Gly Cys Tyr Ile Pro Phe Asp Trp Glu Lys Asp Phe Thr Asn
 85 90 95
 Glu Tyr Met Lys Gln Ile Gln Tyr Ile Cys Leu Ile Phe Ser Gln Glu
 100 105 110

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<210> 9536
<211> 1118
<212> PRT
<213> B.fragilis
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Phe	Leu	Ile	Leu	Cys	Ile	Leu	Cys	Ser	Leu	Gly	Ala	Met	Ala	Gln	Lys
			20				25						30		
Lys	Ser	Ile	Thr	Gly	Val	Val	Thr	Asp	Ala	Ser	Gly	Glu	Ser	Val	Ile
		35					40					45			
Gly	Ala	Ser	Val	Val	Glu	Val	Gly	Thr	Thr	Asn	Gly	Val	Ile	Thr	Asp
	50					55					60				
Ile	Asp	Gly	Lys	Phe	Thr	Leu	Ser	Val	Asp	Pro	Asn	Gly	Lys	Ile	Lys
65					70					75					80
Val	Ser	Phe	Val	Gly	Tyr	Gln	Pro	Gln	Thr	Ile	Asp	Val	Lys	Gly	Lys
				85						90				95	
Gly	Ser	Phe	Asn	Ile	Gln	Leu	Lys	Glu	Asp	Ser	Glu	Met	Leu	Glu	Glu
			100					105					110		
Val	Val	Val	Thr	Gly	Tyr	Gly	Gly	Lys	Gln	Leu	Arg	Thr	Lys	Val	Thr
		115					120					125			
Asn	Ser	Ile	Ala	Lys	Val	Lys	Glu	Glu	Thr	Leu	Lys	Gln	Gly	Met	Phe
	130					135					140				
Thr	Asn	Pro	Ala	Gln	Ala	Leu	Ser	Gly	Ala	Val	Ala	Gly	Leu	Ser	Val
145					150					155					160
Ser	Gln	Thr	Ser	Gly	Asn	Pro	Gly	Ser	Ala	Pro	Thr	Leu	Val	Leu	Arg
				165					170					175	
Gly	Gly	Thr	Asn	Phe	Asp	Gly	Ser	Gly	Ser	Pro	Leu	Ile	Leu	Ile	Asp
			180					185					190		
Gly	Gln	Val	Arg	Ser	Ser	Leu	Ser	Asp	Ile	Asn	Pro	Asp	Asp	Ile	Glu
		195					200					205			
Ser	Met	Glu	Val	Leu	Lys	Asp	Ala	Gly	Ala	Thr	Ala	Ile	Tyr	Gly	Ala
	210					215					220				
Arg	Ala	Asn	Asp	Gly	Val	Val	Leu	Val	Thr	Thr	Lys	Arg	Gly	Lys	Ser
225					230					235					240
Gly	Arg	Ala	Glu	Val	Asn	Leu	Lys	Ala	Lys	Phe	Gly	Leu	Asn	Tyr	Phe
				245					250					255	
Lys	Asp	Ser	Tyr	Asn	Phe	Met	Asn	Ala	Gly	Asp	Tyr	Leu	Tyr	Trp	Met
			260					265					270		
Arg	Thr	Gly	Tyr	Met	Asn	Ala	Tyr	Val	Gly	Asp	Met	Lys	His	Pro	Asp
		275					280					285			
Gly	Ala	Gly	Ile	Lys	Gly	Trp	Ser	Ser	Leu	Ser	Gly	Leu	Thr	Thr	Ala
		290				295					300				
Thr	Pro	Tyr	Gly	Thr	Gly	Asn	Leu	Tyr	Phe	Asp	Lys	Asp	Gly	Val	Thr
305					310					315					320
Pro	Leu	Asp	Gly	Asn	Lys	Thr	Ser	Ser	Ala	Ile	Trp	Ser	Pro	Met	Leu
				325					330					335	
Tyr	Ser	Asp	Asn	Leu	Ser	Phe	Leu	Leu	Asp	Gln	Gly	Trp	Gln	Thr	Met
			340					345					350		

Ile	Asp	Pro	Ile	Tyr	Gly	Asp	Lys	Ile	Ile	Tyr	Lys	Asn	Thr	Asn	Ile
		355					360					365			
Ala	Asp	Phe	Asn	Ile	Asn	Thr	Pro	Ser	Phe	Ser	Gln	Asp	Tyr	Asn	Leu
		370					375					380			
Ser	Val	Ser	Gly	Gly	Asn	Asp	Lys	Gly	Asn	Tyr	Tyr	Ala	Gly	Leu	Gly
385					390					395					400
Tyr	Asn	Lys	Ser	Glu	Gly	Thr	Ala	Val	Gly	Asn	Trp	Tyr	Gln	Arg	Ile
				405					410					415	
Thr	Phe	Thr	Phe	Asn	Ala	Asp	Tyr	Lys	Leu	Lys	Glu	Trp	Leu	Thr	Ser
			420					425					430		
Asn	Ser	Ser	Phe	Asn	Phe	Ala	Asp	Ala	Thr	Trp	Asn	Gly	Leu	Pro	Ala
		435					440					445			
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Asp	Gln	Thr	Tyr	Asn	Ala	Val	Leu	Asn	Tyr	Asn	Tyr	Gln	Ile	Asn	Lys
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Tyr	Asp	Tyr	Gln	Ser	Lys	Tyr	Leu	Leu	Ser	Leu	Val	Leu	Arg	Arg	Asp
				645					650					655	
Gly	Tyr	Ser	Lys	Leu	Ala	Glu	Glu	Asn	Arg	Trp	Gly	Val	Phe	Pro	Gly
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Val	Ser	Ala	Gly	Trp	Val	Phe	Ser	Lys	Glu	Glu	Phe	Met	Lys	Asn	Thr
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				725					730					735	
Ile	Pro	Asn	Pro	Tyr	Leu	Met	Trp	Glu	Lys	Ser	Arg	Thr	Phe	Glu	Val
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Gly	Leu	Asp	Met	Gly	Phe	Leu	Glu	Asn	Arg	Ile	Asn	Ala	Asn	Leu	Thr
		755					760					765			
Tyr	Tyr	Asn	Arg	Leu	Thr	Ser	Asp	Lys	Tyr	Ala	Asn	Ile	Thr	Val	Pro
		770					775				780				
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Asn	Gln	Gly	Phe	Glu	Phe	Glu	Leu	Gly	Phe	Arg	Ile	Ile	Asp	Ala	Lys
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Phe	Leu	Ile	Leu	Cys	Ile	Leu	Cys	Ser	Leu	Gly	Ala	Met	Ala	Gln	Lys
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Lys	Ser	Ile	Thr	Gly	Val	Val	Thr	Asp	Ala	Ser	Gly	Glu	Ser	Val	Ile
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Gly	Ala	Ser	Val	Val	Glu	Val	Gly	Thr	Thr	Asn	Gly	Val	Ile	Thr	Asp
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Ile	Ser	Gly	Lys	Phe	Thr	Leu	Met	Val	Asp	Pro	Asn	Gly	Lys	Ile	Lys
65					70				75					80	
Val	Ser	Tyr	Val	Gly	Tyr	Gln	Pro	Gln	Val	Leu	Asp	Val	Lys	Gly	Lys
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Asn	Ser	Phe	Asn	Ile	Lys	Leu	Lys	Glu	Asp	Ser	Glu	Met	Leu	Asp	Glu
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Val	Val	Val	Thr	Gly	Tyr	Gly	Gly	Lys	Gln	Leu	Arg	Thr	Lys	Val	Thr

Asn	Ser	Ile	Ser	Lys	Val	Lys	Glu	Glu	Ala	Leu	Lys	Val	Gly	Leu	Phe
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Ser	Asn	Pro	Ala	Gln	Ala	Leu	Ser	Gly	Ala	Val	Ala	Gly	Leu	Lys	Val
145					150					155					160
Thr	Gln	Ala	Ser	Gly	Ser	Pro	Gly	Ala	Thr	Pro	Thr	Ile	Val	Leu	Arg
				165					170					175	
Gly	Gly	Thr	Asn	Leu	Asp	Gly	Ser	Gly	Ser	Pro	Leu	Val	Met	Ile	Asp
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Gly	Gln	Leu	Arg	Asp	Gly	Leu	Asn	Asp	Ile	Asn	Pro	Glu	Asp	Ile	Glu
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Gly	Tyr	Arg	Glu	Ile	Asn	Phe	Lys	Ala	Lys	Leu	Gly	Val	Asn	Tyr	Val
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			260					265					270		
Arg	Thr	Thr	Tyr	Ala	Lys	Ser	Gly	Tyr	Tyr	Cys	Ser	Asp	Gly	Glu	Tyr
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Val	Ser	Ile	Ala	Pro	Leu	Thr	Asn	Leu	Thr	Gly	Ala	Ser	Pro	Phe	Gly
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Thr	Gly	Asn	Val	Leu	Gly	Lys	Ser	Ala	Trp	Asn	Ile	Met	Gly	Lys	Thr
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Ala	Asp	Asn	Ala	Tyr	Leu	Leu	Gln	Lys	Gly	Trp	Lys	Glu	Met	Val	Asp
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Pro	Leu	Asp	Pro	Ser	Asn	Met	Ile	Ile	Tyr	Lys	Asp	Ile	Asn	Pro	Gly
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	370				375					380					
Asn	Arg	Gln	Glu	Gly	Leu	Pro	Val	Ser	Thr	Phe	Tyr	Glu	Arg	Tyr	Ser
385					390					395					400
Phe	Val	Leu	Asn	Ala	Ser	Tyr	Lys	Ile	Thr	Asp	Trp	Leu	Thr	Ser	Thr
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Ser	Asn	Phe	Asn	Tyr	Asn	Arg	Ala	Asn	Trp	Lys	Asn	Met	Pro	Gly	Ser
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Thr	Ser	Arg	Phe	Glu	Asp	Glu	Asp	Gly	Asn	Pro	Thr	Leu	Gly	Pro	Asn
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Val	Ala	Asp	Gly	Asn	Gln	Ala	Phe	Gln	Pro	Glu	Lys	Trp	Gln	Asn	Phe
465					470					475					480
Asn	Gln	Thr	Asp	Lys	Phe	Thr	Met	Ile	Gln	Gly	Phe	Gln	Ile	Asp	Ile
				485					490					495	
Met	Lys	Gly	Leu	Phe	Ile	Lys	Gly	Thr	Ala	Asn	Trp	Tyr	Tyr	Ser	Glu
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Gly	Leu	Tyr	Glu	Ser	Phe	Thr	Lys	Asp	Tyr	Met	Asp	Asn	Met	Leu	Thr
		515					520				525				
Glu	His	Tyr	Thr	Lys	Thr	Arg	Glu	Ser	Thr	Ala	Lys	Phe	Glu	Arg	Asn
	530					535					540				
Phe	Ala	Gln	Thr	Tyr	Asn	Ala	Val	Leu	Asn	Phe	Thr	Arg	Thr	Phe	Ala
545					550					555					560
Ile	Asp	His	Asn	Val	Asn	Leu	Met	Leu	Gly	Met	Glu	Tyr	Tyr	Asp	Asn
				565					570					575	
Tyr	Lys	Arg	Gly	Phe	Glu	Ala	Lys	Gly	Ser	Gly	Ala	Pro	Thr	Asp	Asp
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Phe	Ser	Asp	Leu	Ser	Leu	Thr	Asp	Asn	Gly	Glu	Gly	Lys	Arg	Thr	Ile
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		610				615					620				
Asn	Tyr	Asp	Tyr	Lys	Gly	Arg	Tyr	Leu	Val	Ser	Ala	Val	Phe	Arg	Gln
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Tyr	Asn	Arg	Leu	Thr	Ser	Asp	Lys	Tyr	Ala	Asp	Phe	Ser	Leu	Pro	Ser
	755						760					765			
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			805					810						815	
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	835					840					845				
Trp	Val	Gly	Gly	Tyr	Gln	Glu	Gly	Gln	Glu	Pro	Gly	Val	Leu	Val	Val
	850				855						860				
Tyr	Lys	Ser	Asp	Gly	Ile	Tyr	Arg	Ser	Trp	Asp	Glu	Ile	Pro	Gly	Asp
865					870					875					880
Leu	Val	Ile	Thr	Ser	Gly	Asn	Tyr	Phe	Gly	Lys	Lys	Met	Tyr	Gly	Pro
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945					950					955					960
Gly	Arg	Phe	Asp	Phe	Ala	Leu	Asp	Tyr	Trp	Ile	Tyr	Asp	His	Thr	Leu
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